Report Number
10947900-01

FINAL REPORT to the

OFFICE OF NAVAL RESEARCH
Code 321RF

ASSIGNMENT AND OPERATION of the

DEEP OCEAN RESEARCH SHIP AGOR 25

ONR Contract N00014-94-C-00-79

Submitted by:

Woods Hole Oceanographic Institution
Woods Hole, MA 02543

August, 1999

CONTENTS

Summary:

AGOR 25, subsequently named R/V Atlantis, was constructed at the Shipyard of Halter Marine Inc. under the funding and direction of Program Executive Office Expeditionary Warfare (PMS 325), Department of the Navy. Woods Hole Oceanographic Institution (WHOI) was selected as the Charter party operator of the ship, by the owner, The Office of Naval Research (ONR).

During the period January 25, 1994 - May 31, 1998 WHOI provided on-site personnel and logistics and management support to PMS 325 during the construction phase. After delivery in March 1997 WHOI personnel undertook completion of the fitting out, and warranty trials during science programs at sea. Final contract trials and a two month Postshakedown Availability period provided opportunities to identify and correct material deficiencies on the Ship. Management responsibility for AGOR 25 was transferred to ONR at the end of the contract period on May 31, 1998.

This report presents two summaries: (1) A summary of the installed Scientific Information System (SIS) Cable installation which was installed by WHOI throughout the ship subsequent to delivery; (2) R/V Atlantis Turnover Book which summarizes outstanding technical issues, trial cards, warranty items and post delivery work items yet to be accomplished at the end of the Contract period.

ATLANTIS Scientific Information System Cable Installation
Aug 1, 1999

General Notes:

1) The following table (Table I) provides information on the cables installed aboard ATLANTIS for support of the Scientific Information System (SIS) as part of Woods Hole's post delivery upgrade effort. Unless indicated otherwise, all cables listed have been run between the designated location and the Electronics & Computer Laboratory. There are two major termination points within the Electronics Laboratory: the terminal box mounted on the aft bulkhead (general purpose twisted pairs) and the 19" electronics racks in the row in front of the aft bulkhead (video and general purpose coax). General purpose twisted pairs terminate in a single 36" high, 48" wide, 8" deep terminal box (Hoffman C-TD364808) located on the aft bulkhead of the Electronics Laboratory. Cables related to the ship's video capabilities and general purpose coax cables terminate in the 19" racks which contain the majority of the video system control and distribution equipment. Table I indicates the termination points for the various cables using "J" for the junction box and "R" for the 19" rack. "G" is used to denote "general" cable termination points within the Electronics Laboratory.

2) 15 (single cable) or 30 (two cables) 20 gage twisted shielded pairs, 6 (single cable) 18 gage twisted shielded pairs, and 2 coaxial cables are provided between the Electronics/Computer Laboratory and selected locations throughout the ship for general instrumentation interconnections.

3) The list includes the Ethernet fiber optic cables as specified in the AGOR SOR and supplemented with twisted pairs added during the upgrade. The twisted pair coverage has been expanded to include crew staterooms in order to facilitate the installation of an independent "low capacity" net for Email and similar applications. Twisted pairs terminate at the Electronics/Computer Laboratory Ethernet hub and are labeled in accordance with the numeric designations for their end-points (i.e. the cable to the Pilot House is labeled 04-51-0). These numbers are provided in the table.

Ethernet end points are terminated in wall mounted "drop boxes". Fiber optic cables (multimode, 62.5/125 micron) are terminated with ST connectors as specified in the AGOR SOR, twisted pairs are terminated with RJ45 jacks wired in accordance with the T568B standard specified in the EIA/TIA 568A wiring standard

4) The video system cabling encompasses the requirements for the CCTV and SIS video as defined in the AGOR SOR. The cables required for the entertainment antenna system as defined in the SOR (radio and TV antennas) are not included in this cable plan but they are shown on the AGOR Video Block Diagram (6/30/95) as "Cable #1" and "Cable #2".

The "Video distribution" cables allow routing images from all of the ship's video sources to

locations throughout the ship. Therefore, some of the cables duplicate those required by the SIS Audio/Video system as specified in the SOR. Cable duplication was not required or desired; cases for which new cables were not needed are indicated as "existing". Routing and termination of the "distribution" cables was done in a manner similar to that of the originally installed audio/video system including use of splitters and amplifiers where appropriate.

Cables designated as "camera output" and "camera control" are intended for planned video camera locations. Cables designated as "remote video control" allow video control capability at the Aft Control Station, the Electronics Laboratory, the Main Laboratory, and the Winch Control Tower.

Table I

The following uses "J" to denote the main SIS junction box and "R" to denote the 19" electronics racks in the aft area of the Electronics Laboratory. "G" indicates a "general" termination point somewhere in the Electronics Laboratory.

Mast [MAST]
General purpose (J -> Terminal box A12106CHNFSS - stainless)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
Video camera control (R -> Terminal box Burl TC-8561A-1)
#88281; Coax, .278 OD (camera output)
#9774; 6 TSP, 18-gage, .559 OD (camera control)
Instrumentation antenna, 50 ohm (G -> Terminal box A6044CHNFSS - stainless)
3 ea. #8259: RG-58 coax, .193 OD (NNTP time server antenna)
These cables are to terminate in Electronics Laboratory with enough extra length to reach all possible locations.
Notes: All three terminal boxes to be located on mast's upper platform - cables have been run, boxes are not installed.

Pilot House Top [PHTOP]
General purpose (J -> Terminal box A12106CHNFSS - stainless; 5" MCT deck penetration)
Note - these cables run to the Electronics Laboratory rather than the Pilot House terminal box as originally specified; the number of cables to the Pilot House has been reduced by one 15 pair cable but an additional 6 pair cable is needed. This change allows a smaller terminal box in the Pilot House and may ease cable routing problems.
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD

Pilot House [BRIDGE] [04-51-0]

General purpose (J -> Terminal box A1210CH)
Note - this box no longer contains cables from Pilot House Top
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD
Base band video distribution
4 ea. #88281; Coax, .278 OD
Ethernet (SOR fiber) 04-51-0
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR

Aft Control Station - Aft of Pilot House [SRFCTRL] [04-64-1]
General purpose (J -> Terminal box A1210CH
2 ea. #9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
4 ea. #88281; Coax, .278 OD
Video control station (R ->)
4 ea. #88281; Coax, .278 OD (video control station monitors)
#9774; 6 TSP, 18-gage, .559 OD (video control)
RGB-sync CRT distribution
4 ea. #88281; Coax, .278 OD
Ethernet (SOR fiber) 04-64-1
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR
Note - All new cables to terminate in Surface Controller's electronics racks

Radio/Chart Room [CHART] [04-57-0]
General purpose (J -> Terminal box A1210CH)
2 ea. #9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD
Ethernet 04-57-0
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR

Chief Scientist's State Room - [03-42-2/2]
Ethernet (Fiber/10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage

Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR

Master's State Room - [03-42-1/2]
Ethernet (Fiber/10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR

Chief Engineer's Stateroom - [02-49-2/2]
Ethernet (Fiber/10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR

Winch Control Tower [WCHCTRL]
General purpose (J -> Terminal box A12106CHNFSS - stainless)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
Video control station (R ->)
4 ea. #88281; Coax, .278 OD (video control station monitors)
#9774; 6 TSP, 18-gage, .559 OD (video control)
Video camera control (R -> Terminal box Burl TC-8561A-1)
#88281; Coax, .278 OD (camera output)
#9774; 6 TSP, 18-gage, .559 OD (camera control)
RF video distribution
#88281; Coax, .278 OD (multiplexed video distribution)
Note - 4" MCT to be added to overhead for Ashtech antenna cables. Cable support tie points have been added to outside fwd-inboard corner of tower for temporary cables for use with hydro winches.

Hydro Winch Area - **NO CABLES REQUIRED**
Winch Control Tower cables to be used for hydro winch applications

Hospital [HOSP] [02-42-1]
RF video distribution
#88281; Coax, .278 OD (multiplexed video distribution)
Ethernet (10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage

02 Level Forward Van Area & 01 Level Fore Deck [01/02]

General purpose (J -> Terminal box A12106CHNFSS - Stainless)
2 ea. #9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD

Note - 4"-5" MCT through 01 deck from science storeroom to terminal box on forward BHD between 01 & 02 decks. This allows these cables to be used for fore deck and 02 level van space.

Library/Conference Room [LIBRARY] [01-36-2]
Ethernet (Fiber/10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR

Lounge [LOUNGE] [01-36-3]
Ethernet (Fiber/10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR
Video System VCR outputs (-> R)
2 ea. #88281; Coax, .278 OD (video)
2 ea. #8259 RG-58 50 ohm Coax, .193 OD (audio)

01 Level Van Area (ROV Operations Center) [ROVOPS] [01-71-2 A&B]
General purpose (J -> Terminal box A12106CHNFSS Stainless; Frame 84)
2 ea. #9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD
Base band video & RGB-sync CRT distribution
12 ea. #88281; Coax, .278 OD
RF video distribution
#88281; Coax, .278 OD (multiplexed video distribution)
Ethernet (Fiber/10baseT drop box - see note 4)
4 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
Fiber optic cable per SOR

DSOG Electronics Shop (01 Deck) [DSOGELEC] [01-87-4]
General purpose (J -> Terminal box A1210CH); Location to be determined
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD

Ethernet (10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage

Stbd Hydroboom overview video camera [STBDVIDEO]
(Camera to be beneath 03 level @ ~Fr78)
Video camera control (R -> Terminal box Burl TC-8561A-1)
#88281; Coax, .278 OD (video source)
#9774; 6 TSP, 18-gage, .559 OD (video control)

Main Deck ROV Hanger [ROVHNGR] [1-85-4]
General purpose (J -> Terminal box A12106CHNFSS, Stainless)
2 ea. #9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD
Base band video distribution
4 ea. #88281; Coax, .278 OD
RF video distribution
#88281; Coax, .278 OD (multiplexed video distribution)
Ethernet (Fiber/10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
Fiber optic cable per SOR

Bosun's Locker [BOSLCK]
General purpose (J -> Terminal box A1210CH)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD
Note - 4"-5" MCT to be added to 01 level at base of forward mast.
IMET heater transformer to be mounted near terminal box (110vac req'd).

Hydrographic Laboratory [HYDROLAB] [1-64-2]
General purpose (J -> Terminal box A1210CH)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD
Ethernet (Fiber/10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR

Biochemical Analytical Laboratory [BIOLAB] [1-27-2]
General purpose (J -> Terminal box A1210CH)

#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD
Ethernet (Fiber/10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR

DSOG Mechanical Shop - Main Dk [DSOGMCH] [1-85-2]
General purpose (J -> Terminal box A1210CH); Location to be determined
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD
Ethernet (10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage

Office - Main Deck, Fr 25 (No new cables required)
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR

SSSG Electronics Shop - Main Deck, Fr 61 [SSSG] [1-60-1]
General purpose (J -> Terminal box A1210CH)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD
RF video distribution
#88281; Coax, .278 OD (multiplexed video distribution)
Ethernet (10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage

Staging Bay [ALVIN] [1-85-1]
General purpose (J -> Terminal box A12106CHNFSS - stainless)
2 ea. #9879; 15 TSP, 20-gage, .625 OD
2 ea. #9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD2 ea.
RF video distribution
#88281; Coax, .278 OD (multiplexed video distribution)
Ethernet (10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage

Main Deck Starboard CTD launch area NOT REQUIRED
Main Deck Aft [AFTDECK]

General purpose (J -> Propulsion Motor Room Terminal box A1210CH)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
Video camera control (R -> Terminal box Burl TC-8561A-1)
[These cables are for optional A-Frame camera]
#88281; Coax, .278 OD (video source)
#9774; 6 TSP, 18-gage, .559 OD (video control)
Note - These cables to terminate at a junction box in the propulsion motor room, port side aft

Wet Laboratory [WETLAB] [1-76-1]
General purpose (J -> Terminal box A12106CHNFSS - stainless)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD
Ethernet (Fiber/10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR

Main Laboratory [MAINLAB] [1-26-1 A,B,C]
General purpose (J -> Terminal box A1210CH; 3 required)
(Note - Main Laboratory is to have three interconnected terminal boxes approximately equally spaced over the length of the laboratory. Interconnection cables to be the same as those run to the Electronics Laboratory.)
2 ea. #9879; 15 TSP, 20-gage, .625 OD
1 ea. #9774; 6 TSP, 18-gage, .559 OD
6 ea. #88281; Coax, .278 OD **(see note below)**
Auxiliary video control station (R ->)
4 ea. #88281; Coax, .278 OD
1 ea. #9774; 6 TSP, 18-gage, .559 OD
Ethernet (Fiber/10baseT drop box) **(see note below)**
6 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR
Note - Pairs of the Data Twist and .278 coax cables are to be run to the vicinity of the each of the three general use junction boxes.

Winch Room [WNCHRM]
General purpose (J -> Terminal box A1210CH)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD

Battery Service Room (battery chargers) [BATRM] [2-90-01]
General purpose (J -> Terminal box A1210CH)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
2 ea. #88281; Coax, .278 OD
Ethernet (10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage

FR51 Transducer Void [XDUCER]
General purpose (J -> Terminal box A12106CHNFSS - stainless)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD
Sound powered phone cable connecting "jack" boxes on both sides of air lock hatch

Area of Navigation Transducer Tower [EXERCRM]
(Exercise Room, FR54, 1st platform)
General purpose (J -> Terminal box A1210CH)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD

Area of Clean S.W. Intake [BOW]
(Bow thruster room, forward of FR22, Stbd side)
General purpose (J -> Terminal box A12106CHNFSS - Stainless)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD

Area of SeaBeam vertical reference unit (Hippy) [HIPPY]
(GSM storeroom, FR45, 2nd platform, near centerline)
General purpose & Hippy (J -> Terminal box A1210CH)
#9879; 15 TSP, 20-gage, .625 OD
#9774; 6 TSP, 18-gage, .559 OD

Area of ship's gyro synchro interface (NONE REQUIRED

Area of ship's anemometer interface (NONE REQUIRED)

1st platform control room, FR68 [MCS] [2-64-1]
Ethernet (10baseT drop box)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage

All science staterooms
(Chief Scientist is listed separately & not included here)
4 each - 03 Level [25-28]
7 each - 1st platform [29-35]

Ethernet (Fiber/10baseT drop box - see note 4)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage
Existing:
#88281 Coax, .278 OD (RF multiplexed video distribution)
Fiber optic cable per SOR

All crew staterooms
(Master and Chief are listed separately & not included here)
4 each - 02 Level [36-39]
8 each - 01 Level [40-47]
8 each - 1st platform [48-56]

RF video distribution
Bus network topology - #88281; Coax, .278 OD (multiplexed video distribution)
Ethernet (10baseT drop box)
2 ea. Belden Data Twist 350; 10baseT; 4 unshielded twisted pairs, 24 gage

VIDEO SYSTEM NOTES

The attached diagram shows the method for combining all aspects of the ATLANTIS video systems including CCTV, SIS and entertainment. The result is a system for which video sources (closed circuit cameras, computer generated images or data overlays, VCR outputs, and standard VHF/UHF antenna reception) can be combined in manner allowing distribution throughout the ship as a single RF multiplexed signal. This enables each of the available sources to be viewed with a standard television receiver utilizing its RF tuner. In addition, the CCTV Router can allow control of the closed circuit video cameras (including zoom lens and pan/tilt mechanisms) from a minimum of two locations (Electronics Laboratory and Aft Bridge Control Station) and provides a flexible means for viewing base-band video (higher quality than RF multiplexed) at selected locations.

In general terms, the above is accomplished as follows: Each video source is connected to a

distribution amplifier having at least three outputs: one for local monitoring of the source (needed for camera testing and adjustments etc.), a second for providing a signal to RF modulators and the combiner, and a third for providing a signal to the CCTV controller/router. This last item is a sophisticated video switch which not only allows selectively connecting sources to displays and recorders but also provides camera control capability from multiple locations. Some of the router outputs are looped back to provide additional inputs; as an example, the router can provide any of the available camera images to computer generated data overlay hardware and the output from this becomes another source for both RF and baseband distribution.

A major technical issue revolves around the ship's entertainment antenna system. When within reception range, RF video signals become available from this source which are likely to interfere with similar signals generated by the ship's RF modulators (i.e. two channel "fives"). A complete solution to this problem is complex and expensive; a simple, inexpensive, easily expandable, partial solution has been used as an alternative. The two VCR's shown on the diagram are those specified for the entertainment system and shown on the SOR's CCTV diagram. These recorders (located in the lounge) are used as video sources, providing inputs either from entertainment tapes or the ship's antenna system. Standard VCRs accept RF inputs over a wide range of channels and convert the selected channel to both base-band video and also RF channel 2 or 3. As a result, the two recorders shown on the diagram would allow entertainment video from tapes or the antenna to be available on two pre-selected channels of the RF distribution system. However, the VCR RF output level is probably too low for direct input to the combiner. As a result, the diagram shows the VCR base-band video (and audio) output routed through an amplifier and RF modulator in exactly the same manner as with all the other video sources. This arrangement allows adding entertainment channels by simply adding additional consumer type VCRs. Note that in addition to this two channel entertainment capability, a pair of independent coaxial cables exist (shown as cable #1 & cable #2) which provide each state room with RF signals directly from the ship's antenna as specified in the original SOR.

The proposed system has considerable flexibility in the method used to control the CCTV cameras and switcher. Cables are included to allow a future camera control station in the Main Laboratory. Also, 4 coaxial cables are included in the "general purpose" cable group which can be used for baseband video signal distribution if needed.

Video System Parts List:
(Item numbers refer to attached diagram)

1) Single Channel On-site Receiver Driver, Burle TC-8561A-1 (includes NMEA 4 10"x8"x5" junction box); 6 required

2) RF Modulator, Blonder/Tonge Laboratories Inc. #5923 or equal, rack mounted; 10 required

3) RF Combiner, Scientific Atlanta #68-12TS or equal, rack mounted; 1 required

4) Video Switcher/Control Station, Burle TC-85601A (1 ea.), TC-8620 (2 ea.), TC-8834 (4 ea.); rack mounted

5) Keyboard and Control Signal Extender, Burle TC-8550A (2 ea), TC-8557HR (2 ea.); includes junction box for cable termination at keyboard location. Note - third video control station to be provided by operator if needed.

6) Signal Distribution Unit, Burle TC-8568; rack mounted; 1 required

7) Line amplifiers and splitters, best commercial; quantity to be determined by cable arrangement

8) Video Distribution Amplifier, Grass Valley Group 8200 series or equal, rack mount; 10 required

9) Computer data overlay units and/or VGA to NTSC converters - to be supplied by operator

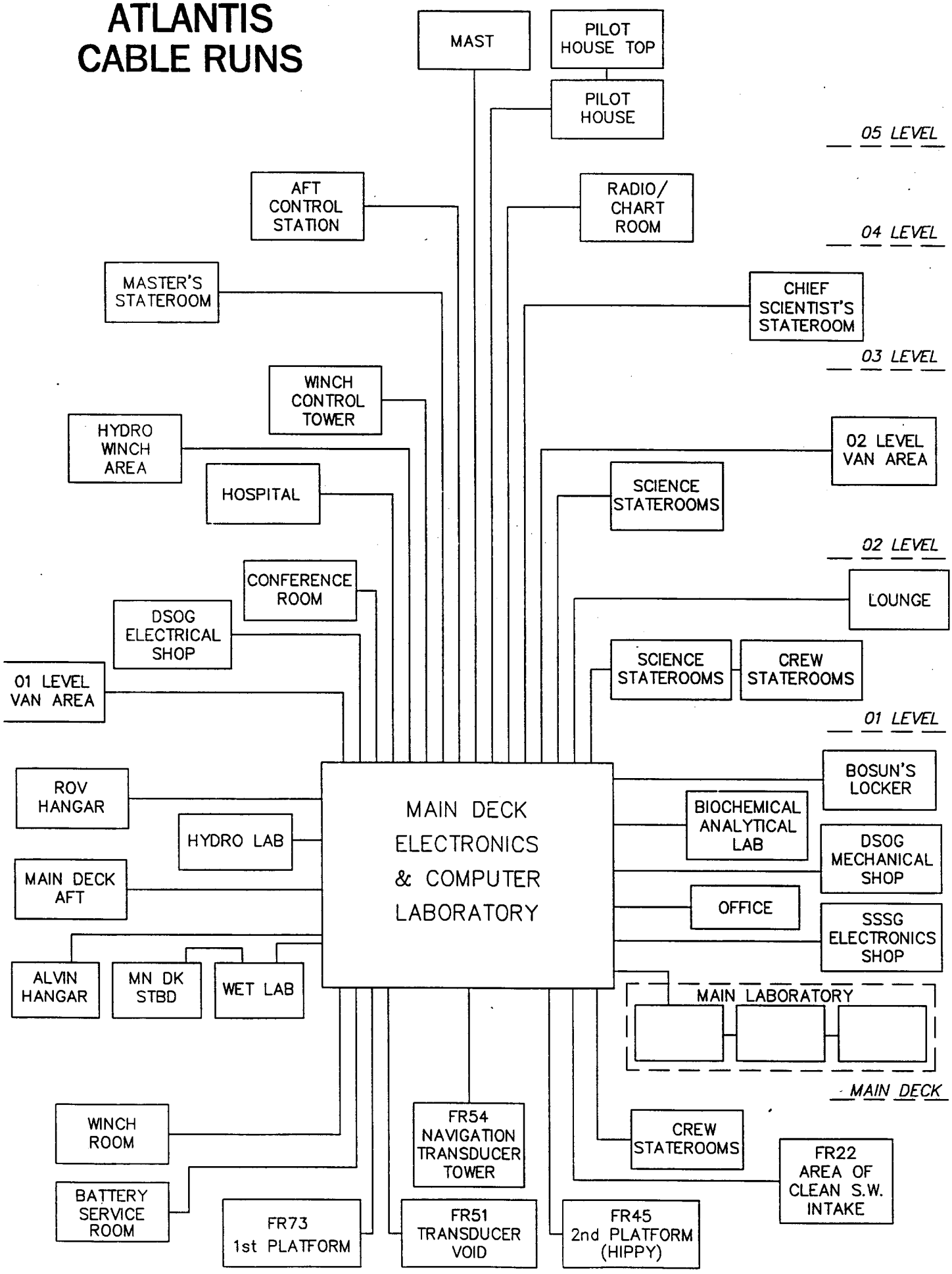
10a) Color video camera with zoom lens and pan and tilt mechanism; 4 required
Color CCD Camera, 110v, Burle TC-282
7.5mm to 75mm Zoom lens, 1/2" format, Burle TC-9970A
Pan and Tilt Mechanism, Burle TC-6408A-1
External camera housing, Burle TC-9388-1
Camera sunshield, Burle TC-9388-S
Polarizing filter - best source

10b) Monochrome video camera with pan and tilt mechanism; 2 required
Monochrome Video Camera, 110v, Burle TC-281
6mm Auto-Iris lens, Burle TC-1806A
Pan and Tilt Mechanism, Burle TC-6408A-1
Camera housing, Burle TC-9358-1
Camera sunshield, Burle TC-9388-S

11) Video Monitors
9" Color, Panasonic BT-901 or equal; 4 required
9" Monochrome, Burle TC-1909; 4 required
Dual monitor rack mounts, Burle TC-1909MK; 2 required
(Location and mounting arrangement for color monitors to be determined)

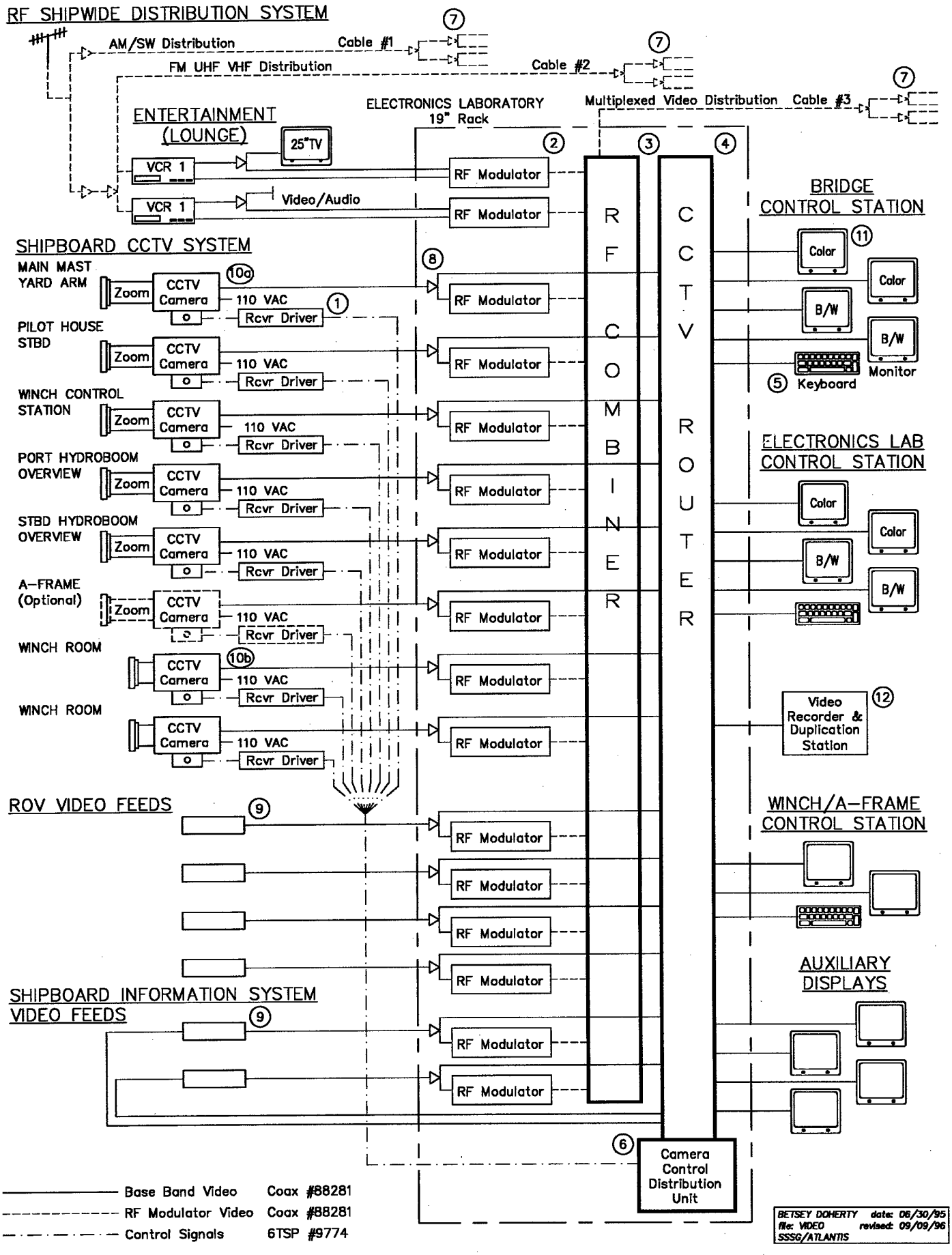
12) Video recording and duplication station - to be provided by operator

ATLANTIS CABLE RUNS



ETSEY DOHERTY date: 01/13/95
le: ATCBLRUN revised: 12/02/96
SSG\ATLANTIS

ATLANTIS VIDEO SYSTEM BLOCK DIAGRAM



DEPARTMENT OF THE NAVY
PROGRAM EXECUTIVE OFFICE
EXPEDITIONARY WARFARE
2531 JEFFERSON DAVIS HIGHWAY
ARLINGTON VA 22242-5171

IN REPLY REFER TO
9000
Ser 325E/1531
06 Oct 98

From: Program Executive Officer, Expeditionary Warfare
To: Office of Naval Research (Code 321RF)

Subj: R/V ATLANTIS TURNOVER BOOK

Encl: (1) Turnover Book

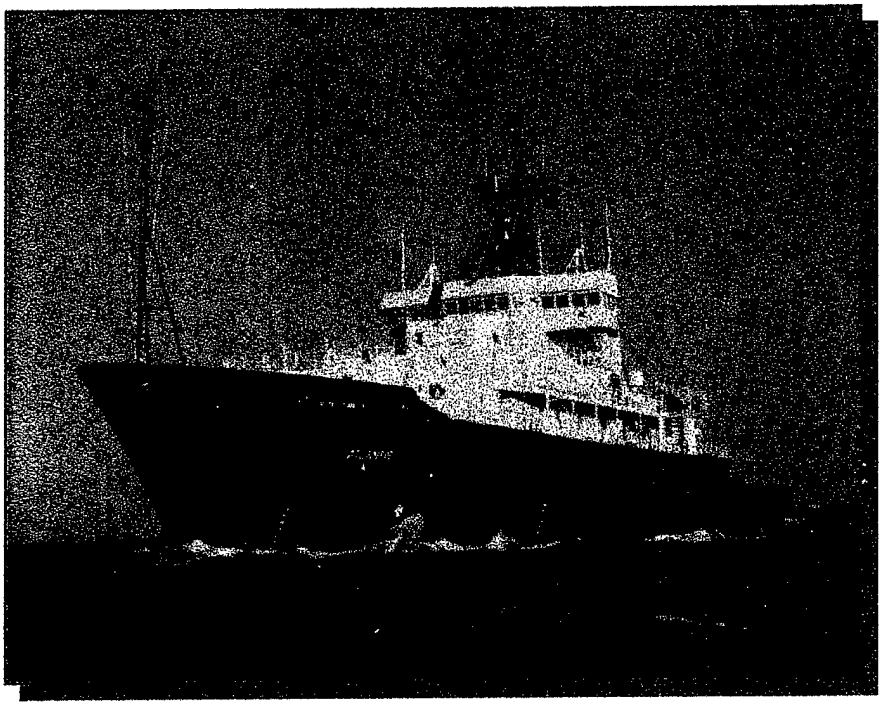
1. Management responsibility for R/V ATLANTIS (AGOR 25) was transferred from the Program Executive Office Expeditionary Warfare (PEO EXW) PMS325 to the Office of Naval Research (ONR) on 31 May 1998 (SCN OWLD). Outstanding technical issues, trial cards, warranty items, and post delivery work items not accomplished prior to SCN OWLD are documented in enclosure (1).

2. I am available to discuss these or any other issues upon your request.

P. M. KILROY
By Direction

Copy to:
WHOI (J. Coburn)
SIO (T. Althouse)
NOAA (J. Walters)
SUPSHIP (Code 155)

R/V ATLANTIS



Turnover Book

R/V ATLANTIS
TURNOVER BOOK

Table of Contents

R/V ATLANTIS
TURNOVER BOOK

FORWARD

R/V ATLANTIS (AGOR 25) was constructed to conduct general purpose oceanographic research in coastal and deep ocean areas including: physical, chemical, and biological oceanography, multi-discipline environmental investigations, ocean engineering, marine acoustics, marine geology and geophysics, and survey tasks. The ship is managed by the Office of Naval Research (ONR) and operated by Woods Hole Oceanographic Institution (WHOI). The Navy's Program Executive Office, Expeditionary Warfare (PEO EXW) PMS325, has prepared this informational packet to document the transfer of management responsibility to ONR.

HISTORY

1) Contract Data

R/V ATLANTIS (AGOR 25) was constructed under US Navy Contract N00024-93-C-2302, awarded to Halter Marine, Inc. at Moss Point, MS on 11 January 1993. Option for construction of AGOR 25 was exercised on 15 February 1994. An Engineering Change Proposal (ECP) was incorporated into the contract to modify R/V ATLANTIS to accommodate DSV ALVIN.

2) Milestone Events

Start Construction	15 Mar 94
Keel Laying	16 Aug 94
Launch	01 Feb 96
Builder's Trials (BT)	30 Sep 96
Acceptance Trials (AT)	12 Nov 96
Delivery	03 Mar 97
Completion of Fitting Out (CFO)	27 Jun 97
Warranty Trial	17 Oct 97
Warranty Ends	03 Dec 97
Final Contract Trials (FCT)	02 Jan 98
Post Shakedown Availability (PSA)	06 Jan - 06 Mar 98
SCN Work Limit Date	31 May 98

3) PEO EXW Point of Contact:

The Point of Contact for PEO EXW PMS325 is Mr. Donald Robertson, PMS325E:

Address: Mr. Donald Robertson
Program Executive Office
Expeditionary Warfare
PMS325E
2531 Jefferson Davis Highway
Arlington VA 22242-5171

Telephone: (703) 602-3511
Fax: (703) 602-5606
Email: robertsondc@navsea.navy.mil

4) Operational Control Point of Contact:

The Office of Naval Research (ONR) has bailed R/V ATLANTIS to the Woods Hole Oceanographic Institution (WHOI) for a five year period. WHOI is responsible for the day to day operations of the vessel including schedule coordination and logistic support.

The Point of Contact at ONR is Ms. Sujata Millick, Code 321RF

Address: Ms. Sujata Millick
Office of Naval Research
Code 321RF
800 North Quincy Street
Arlington, VA 22217

Telephone: (703) 696-4530
Fax: (703) 696-2007
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The Point of Contact at WHOI is Mr. Joe Coburn, Marine Superintendent

Address: Mr. Joe Coburn
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Woods Hole, MA

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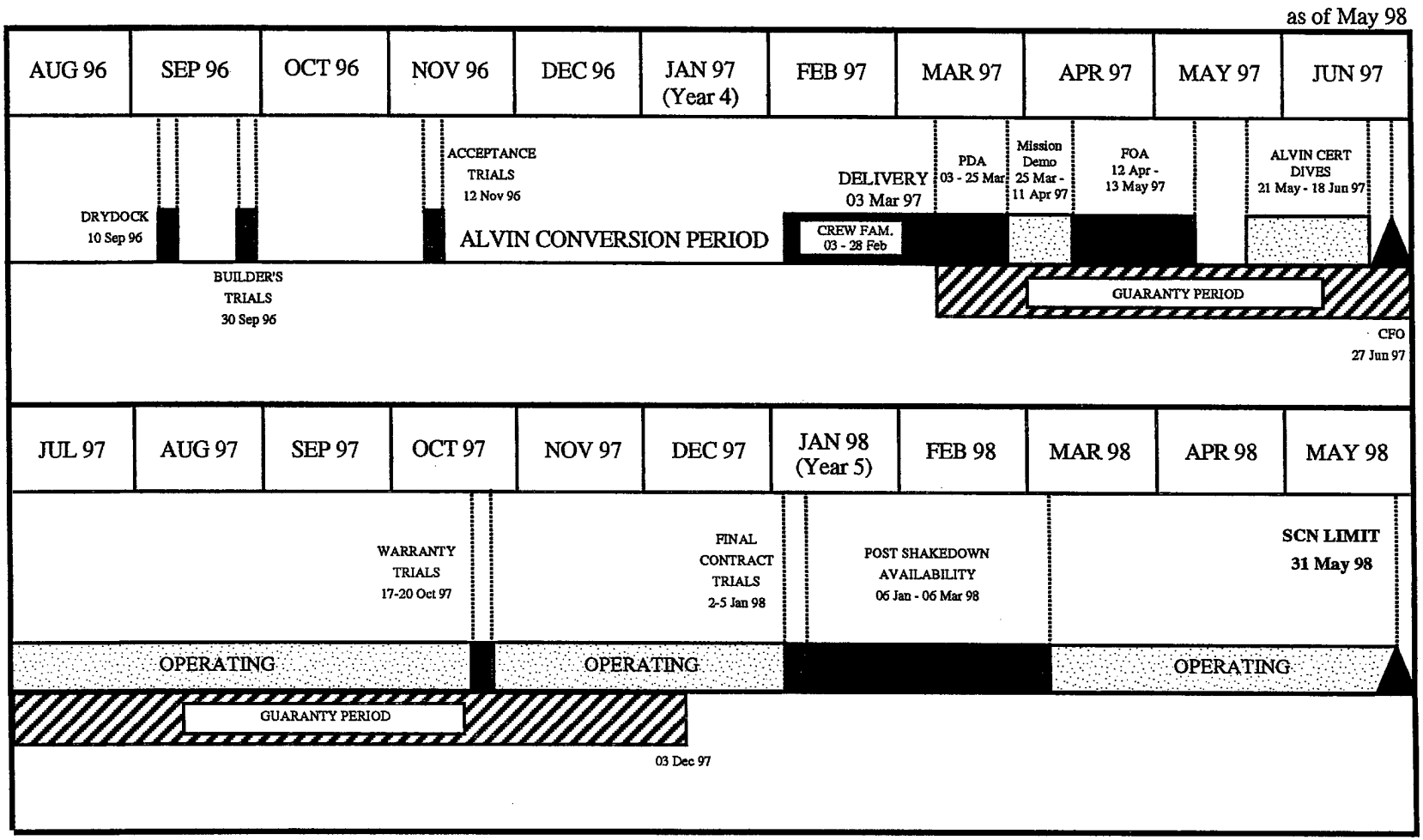
Email: jcoburn@whoi.edu

AGOR 25 TEST & TRIALS SCHEDULE



- Trials - In Port - At Sea - Milestones

AGOR 25 R/V ATLANTIS

OUTSTANDING TECHNICAL ISSUES

The following outstanding technical issues represent areas of the ship which could benefit from improvement, but were not able to be addressed during construction or post delivery because of time and budget constraints. Items which are still shipbuilder-responsible have been identified. The technical issues are broken down into five categories:

Life Cycle Cost Reductions: Items which will reduce the ship's life cycle cost through reduction in manning or fuel usage.

Science/Mission Improvements: Items which will improve the ship's ability to perform research in an efficient and cost-effective manner.

Safety: Items which will improve the safety of the ship's crew and science personnel.

Reliability/Maintainability: Items which will improve the reliability and maintainability of ship and mission equipment and systems.

Quality of Life: Items which will improve the quality of life for the ship's crew and science personnel.

Life Cycle Cost Reductions

1) **Topic:** Propulsion Control Upgrade
Issue: WHOI would like complete ACCU certification to enable unattended machinery space operation on ATLANTIS.
Status: The required modifications are:

- Add the pager option to the system.
- Complete upgrade to monitoring system: install sensors on new monitoring points.
- Add KVAR or (amp) limit control circuitry on each generator. As presently configured, generators have only kW limits which are not sufficient to prevent overcurrent when pf is less than unity.
- Refine power limit circuit of each generator to allow operation right at the power limit without surging or hunting.
- Configure the generator unloading control circuit so that it functions when removing a generator in remote and automatic modes.

2) **CLASS ISSUE**
Topic: ACCU (Unattended machinery space operation) Limitations
Ref: Warranty Items: 1W095EL01, 1W477EL01
Issue: When a ship's service generator fails and drops off line, a standby generator will not power-up the ship's service bus because of under voltage trips that are not designed to automatically reset themselves. Under these conditions, the ship is not capable of meeting ACCU regulations unless extra generators are on line on the ship's service bus.
Status: Operation under ACCU (as defined by ABS and USCG) requires that the machinery control system respond to a generator casualty automatically by either starting a standby replacement generator or, if two generators are on line, by shedding non-vital loads to enable the remaining functional generator to remain on-line. The shipyard and GE designed this system to shed load upon failure. This required the ship to have two generators in operation on each of the two buses at all times (a total of four generators), even though most operating conditions can be satisfied with only one generator on each bus. In order to avoid a serious impact on efficiency, an ECP was accomplished to add the capability of having a generator start automatically to replace a failed one. After some time in operation, it has been discovered that when a ship's service generator fails, under voltage trips open on the 600/480V transformers. When the standby generator comes on line, the trips are not capable of automatically resetting themselves. The system should be modified so the trips are automatically reset when a standby generator comes on line. Without this feature, the ship will be required to have two generators on the ship's service bus at all times when operating under ACCU regulations.

Life Cycle Cost Reductions

3) **CLASS ISSUE**

Topic: Operation of Ship in Power Limit

Ref: Post Delivery Work Item (SIO-159)

Issue: GE machinery control system is not designed to allow steady state operation in power limit condition.

Status: Note that this item is not a shipbuilder-responsible deficiency because the system operates as designed with respect to power limit and is not in violation of any requirement. The problem is that the design is not compatible with the way the ships are normally operated. When the ship reaches engine power limit (90% of maximum continuous rating), the GE machinery control system responds by chopping the power back significantly below the limit. The system then allows the engines to gradually accelerate back up to the limit where the cycle repeats. Under typical sea conditions, which impose an unsteady load on the propulsion system, the engine load will oscillate as the system continually goes in and out of power limit while repeatedly sounding nuisance alarms. Avoiding this situation with the present system requires that excess generators be available on line, which increases the fuel consumption of the ship. The user's objective is to operate more efficiently with the ship in steady state power limit with a minimum number of engines on line. GE has indicated that they can modify the system and will provide an estimate of cost.

Science/Mission Improvements

1) **Topic:** HVAC Improvements

Issue: The distribution of conditioned air within the labs is so concentrated that scientists frequently install cardboard or plastic deflectors to keep the chill air off their necks and to prevent their papers from being blown away. Additionally, condensation frequently leaks out of diffusers.

Status: Correction of this problem will require individual study and treatment for the different locations where problems exist. One approach is to install more diffusers so that the same overall quantity of air can be provided to the labs, but at lower velocities.

2) **Topic:** Improve Lab Power

Ref: Post Delivery Work Item (WHOI-48)

Issue: The UPS power needs to be provided to all the labs vs. only the computer lab. The lab outlets should offer the choice between ship's service (not "clean") and clean power from the MG sets to insure that the use of 'dirty' appliances like portable power tools do not introduce dirty power on the circuits being used for sensitive instruments.

Status: Feasibility study completed during PSA engineering effort.

3) **CLASS ITEMS**

Topic: Soft Start Controllers for Cranes

Issue: Start-up of the ship's cranes results in a momentary "brown-out". The ship's service generators are not able to respond quickly enough to the very heavy instantaneous load.

Status: The start controllers for the air conditioning units and cranes are single stage contactors. Because these are high horsepower motors, the starting current is very high. This momentary current drain from the bus results in a sudden temporary voltage drop that can have adverse effects on sensitive equipment. The clean power system is not extensive enough to accommodate all of these sensitive users. Recommend that soft start controllers or new reduced voltage controllers be installed.

4) **CLASS ITEMS**

Topic: Lab Drain System Backups

Ref: Warranty Items: 1W223HB01, 1W213HB01

Issue: Water draining from a sink in the forward part of the main lab backs up into the deck drains in the lab and the electronics shop. Filters and strainers have been installed in sinks and drains and drain lines have been cleared. However, problem has not been solved. In is suspected that the lab drainage system lacks adequate pitch and size to handle the drainage of the labs.

Status: Investigate replacing drain piping.

5) **Topic**: Workboat Storage and Launch System

Ref: Post Delivery Work Item (WHOI-32)

Issue: Safe, rapid and efficient (minimum personnel) deployment of the workboat is essential to Alvin operations. The existing workboat does not meet these criteria because of the cumbersome launching process with a crane.

Status: One commercially available alternative was considered for PSA, but it was very expensive and did not make the cut off list. WHOI will evaluate other alternatives and determine best approach.

Science/Mission Improvements

6) **Topic:** Lab Compressed Air

Issue: The ship's compressed air system delivers air at 40 psi in the labs, but many scientific applications require between 100 and 120 psi. Raising this air pressure will require design changes and regulatory approvals.
Status: Increase pressure of compressed air in labs.

7) **Topic:** Crane Upgrade (whip speed)

Issue: The whip speed and the extension of the boom are too slow for safe handling operations over the side.
Status: Both cranes have been upgraded to allow the simultaneous use of whip and boom extension. Further modification is needed to improve speed of these functions.

8) **Topic:** Darkroom

Ref: Warranty Item: 1W088DK01
Issue: Light leaks were not fixed by the shipyard.
Status: Fix light leaks

9) **Topic:** Alvin Hangar Drains

Ref: Post Delivery Work Item (WHOI-41), 1W506DK01
Issue: The Alvin hangar still drains poorly despite recent modifications. Manual sweeping is required to move the water to the drains. Deck drains on the inboard side of the hangar are located in high spots. The drain openings seem undersized and clog easily. There are no deck drains on the outboard side of the Hangar. There is no trough drain next to the side roll up door, which is where most of the water enters the hangar in a seaway.
Status: Investigate improving Hangar drainage.

10) **Topic:** ROV Hangar Drains

Ref: Post Delivery Work Item (WHOI-41), 1W506DK01
Issue: The ROV hangar has very poor drainage. The trough drains at the roller door sill are too small and clog easily. Drains located in the hangar are too few and too small.
Status: Investigate improving ROV Hangar drainage.

11) **Topic:** STBD Hydroboom Fairlead

Ref: Warranty Item: 1W403DK01
Issue: The hydrographic winches and the hydroboom are mounted on the same deck level which causes the wire coming off the winches to be higher than the boom sheave. As a result, the winch wire has an insufficient wrap (less than 90 degrees) around the sheave and the wire tends to ride up out of the sheave groove. This has resulted in breakage of the wire.
Status: Hydroboom should be raised to provide a more complete wrap around the sheave (this was completed on AGOR 24).

Science/Mission Improvements

12) **Topic:** A-Frame Control Circuitry Reliability
Issue: A power supply card in the A-frame control circuitry has failed once which resulted in the cancellation of an ALVIN dive. The failure is believed to have been caused by noisy propulsion bus power. The A-frame must have excellent reliability so that a failure doesn't leave ALVIN stranded in the water.
Status: Possible solutions include: having a clean, reliable power supply, having all the necessary spare parts to effect repairs at sea, and/or having redundant control systems.

13) **Topic:** Cradle and Submersible Motion
Ref: Post Delivery Work Item (WHOI-35)
Issue: There is no means of restraining athwartships movement of the submersible cradle when the ship rolls. The failsafe locking gear brake has minimal tooth engagement and may be inadequate to restrain the cradle in the fore and aft directions. The forebody lateral restraining jacks are built and installed such that any fore and aft movement of the cradle may cause them to lose contact with the submersible or bend.
Status: Provide restraining devices.

14) **Topic:** Sub A/C Dehumidification System
Ref: Post Delivery Work Item (WHOI-56)
Issue: The present air system air handler is larger than necessary and adds to the noise level in the hangar. The system has proven to be unreliable with repeated failures. Failure of this support equipment while working in southern waters will cause loss of dives.
Status: Replace system

15) **CLASS ISSUE**
Topic: SEABEAM Performance
Ref: Warranty Items: 1W192OP02-06, 09, and 12-13
Issue: System not operating as required. Major problems include poor deep water accuracy and inability to operate in shallow water. This item is a shipbuilder-responsible deficiency.
Status: Seabeam developed revised software, which was tested on R/V REVELLE July 8-11 1998. Results indicate improved deep water accuracy and functional shallow water performance. However, swath width in deep water is 96 degrees, which falls short of the required 120 degrees. In addition, shallow water accuracy does not meet requirements on most beams. Further Seabeam work needed to bring system performance up to the requirements.

16) **CLASS ISSUE**
Topic: HVAC System - Biochemical Laboratory
Issue: Bio Lab HVAC system as designed does not perform well under different ambient conditions.
Status: As required by the SOR, the Bio Lab has a 100 percent fresh air supply. Under cold outside ambient conditions, the system is not capable of heating the incoming fresh air sufficiently to avoid an uncomfortable blast of air under the single diffuser. System flexibility should be improved by installing a variable speed supply fan and an additional diffuser in the space to help distribute air more evenly.

Science/Mission Improvements

17) **CLASS ISSUE**
Topic: SEABEAM Hippy vertical reference unit (VRU)
Ref: Post Delivery Work Item (SIO-164) and (SIO-165)
Issue: SEABEAM Hippy vertical reference is unable to handle standard turn rates. Vessel must turn 10 degrees or less per minute for the Hippy to function. This adversely impacts surveying operations. In addition, the current location of the Hippy is forward of the center of motion which subjects the Hippy to adverse motion effects from pitch induced accelerations.
Status: On REVELLE, an additional VRU (TSS) was installed post delivery, but has not yet been made to work. The Hippy will be relocated to a location closer to the center of motion of the ship where there are fewer adverse motion effects. Same resolution recommended for ATLANTIS.

18) **CLASS ISSUE**
Topic: Weather/Working deck noise
Ref: SOR Figure 073-1
Issue: Noise levels on the port side working deck areas are higher than optimum.
Status: Noise levels have been reduced as a result of PSA modifications. Exhaust fans were relocated and PORT/STBD supply fan plenums insulated. Further noise reduction would help improve working deck communications. Recommend further investigation to determine if additional cost effective noise treatments can be incorporated.

Safety

1) **Topic:** Engine Room Vent Fire Dampers
Ref: Warranty Item: 1W36OH01
Issue: These fire dampers have consistently required an inordinate level of effort to maintain. As crucial components of the fire protection system, this is a high priority safety requirement
Status: Some design effort is necessary to select the specifications for high quality replacements.

2) **CLASS ISSUE**
Topic: Weather Deck Drains
Issue: Standing water on deck is a problem. The 01 level on the port side accumulates water, which gets very deep in the area of the ROV vans. The main deck traps water on the starboard side at the entrance to the house at frame 75. The weather deck drainage problem is caused by an inadequate number of drains and a lack of deck sheer or camber. In addition, all drains are routed over the port side, which requires long piping runs and results in poor flow.
Status: Some drain modifications were completed during PSA. However, accumulation of water on decks is still a problem. Further modifications to be considered include installing additional drains on the 01 Level near frames 50-55 and adding overboard discharge piping from selected drains to discharge over the starboard side. Existing drains need to be relocated and enlarged.

3) **Topic:** AFFF System
Issue: The existing AFFF system has failed repeatedly to pass tests for adequate foam concentrations. During the March 1998 Coast Guard re-inspection, this system failed and a Coast Guard requirement was issued to make the system work or replace it.
Status: Investigate fixing or replacing the system

4) **Topic:** Shower Grab Bars
Ref: Post Delivery Work Item (SIO-142)
Issue: Additional shower grab bars needed for personnel safety.
Status: Install shower grab bars.

5) **Topic:** Accommodation Ladder
Issue: Ship needs an accommodation ladder for safe personnel movement on and off the ship when in ports with large tidal changes.
Status: At delivery, the ship was supplied with a simple straight gangway which is adequate only when tidal change is minimal. In some port areas, like Astoria, tidal change is significant and the gangway undergoes a large change in angle while the ship rises and falls with the tide. This often requires rigging the gangway at the 01 level, which is not convenient for access to the ship. An accommodation ladder consisting of a small platform and hinged ladder section which runs nearly parallel with the ship would afford improved safety for personnel boarding the ship. In addition, this accommodation ladder would also provide a safer way for pilots to board the ship (rather than the rope ladder used now).

Reliability/Maintainability

1) **Topic:** Forward Vent Intake

Ref: Post Delivery Work Item (SIO-194)
Issue: Complete forward vent intake modification.
Status: During PSA there was not enough time to get delivery of the new electric pre-heater required for the reconfigured vent plenum (existing one did not fit in redesigned vent intake). Specifications have been developed. The unit must be ordered and installed. (The feeder circuit exists.)

2) **Topic:** Alvin battery charging power

Ref: Post Delivery Work Item (WHOI-45)
Issue: The entire A frame and Alvin services panel is fed from the propulsion bus. Because the A-frame HPU is a heavy load (large induction motor), it is appropriate that is be fed from the propulsion bus to avoid noise on the ship's service bus. However the A-frame control circuitry and other ALVIN support functions such as battery chargers and shore power should be fed from the cleaner, ship's service bus.
Status: The existing subpanel must be split so that the big HPU motor remains fed from the propulsion bus and the rest of the loads are fed from a separate new ship's service feeder. Completed by WHOI after SCN OWLD.

3) **CLASS ISSUE**
Topic: Weathertight Doors
Ref: Warranty Item: 1W523DK01
Issue: Weathertight doors on the ship are leaking in moderate sea conditions. These doors are exhibiting signs of severe internal corrosion around hinges, hardware and seams. Deterioration is occurring even on doors that have "eyebrows" above the door. In addition, the existing doors have square frames. The door frames at frame 35 have experienced structural cracking which is likely caused by the stress concentrations occurring at the square corners.
Status: Recommend weathertight doors be replaced with rounded corner doors with a knife edge seal to improve weathertightness. Halter Marine replaced two of these doors. Others will need replacement.

4) **Topic:** Second Fuel Oil Purifier

Ref: Post Delivery Work Item (SIO-54)
Issue: Complete installation of second fuel oil purifier.
Status: A second purifier has been installed; however, this installation requires the installation of additional waste oil connections. The shooter equipment on this unit must be directed downward and cannot be directed to the existing waste oil tank. The added capacity of this unit exceeds the vent capacity of the existing waste oil tank so additional waste oil handling capacity must be installed. Completed by WHOI after SCN OWLD.

5) **Topic:** Mooring Chocks

Issue: The existing bulwarks have been damaged repeatedly where chocks are installed in them. It happened when the vessel traveled through the Panama Canal and it happened while the vessel was mooring in Manzanillo, Mexico.
Status: The existing chocks need to be substantially strengthened or replaced by independently mounted chocks to withstand experienced mooring line stresses.

Reliability/Maintainability

6) **CLASS ISSUE**

Topic: Jacket Water Heat Exchanger Failures

Ref: Post Delivery Work Item (SIO-43), (SIO-135); SOR Sec 070-1 Table, 1W239MP01

Issue: Large engines continue to have an overheating problem. The ship is unable to run at full power when sea temperatures are higher than 80 degrees. The cooling problem may be related to the premature corrosion failure of jacket water heat exchangers which has occurred on all three ships of the class.

Status: The AGOR 24's large engines have routinely experienced jacket water temperatures in the 200s (deg F) when sea temperatures are in the 80s. Engine vendor replaced thermostats with 150F units, which helped the problem slightly but had the undesirable side effect of lowering the jacket water temperature to unacceptable levels when the engines are at low loads. Raw water pressure gauges and low raw water pressure alarms have been installed on all engines to monitor sea water flow. The overheating problem seems to be confined to the large engines, which have all experienced heat exchanger failures caused by corrosion. These heat exchangers were supplied by the engine vendor and are not standard Caterpillar units. The corrosion failures have occurred in the heat exchanger end bells, which are ferrous. A temporary repair has been accomplished by protecting most of these surfaces with a ceramic coating. This is only a temporary fix. Fuel oil coolers need replacing. The present coolers contain ferrous components subject to corrosion. New ones have been purchased but are not direct fits. Ultimate solution may be to replace heat exchangers with more durable properly sized units.

7) **CLASS ISSUE**

Topic: Engine Room Environmental Conditions

Ref: Post Delivery Work Items (SIO-122) and (SIO-123)

Issue: The heat levels in selected areas of the engine room are high and could lead to premature equipment failure.

Status: Numerous improvements were made to the Generator Room ventilation system to reduce the air temperature in the space and to eliminate localized hotspots around machinery. Improvements included rearranging the exhaust fans to improve flow, ducting cooler air to the engine air intakes, and modifying air distribution in the space to achieve more complete circulation. System is working better; however, a couple of areas need further improvement. #1 A/C plant has tripped out occasionally on high temperature. In an effort to correct this situation, SIO has installed a cooling fan and ventilation holes. Final evaluation pending next trip to tropics. Major outstanding problem is that #2 generator experiences high bearing temperatures which may lead to premature failure. Possible solution may be to install baffles to redirect hot air exhaust from generator windings.

8) **CLASS ISSUE**

Topic: Reefer Plant Lack of Redundancy

Issue: Although the ship has two reefer plants installed, the system is designed so that numerous key components such as piping, diffusers, valves, and controls are shared and not redundant.

Status: The reefer system has operated satisfactorily to date with one compressor on-line at a time. However, should one of the shared system components fail, both reefer units would be inoperative. Recommend that the system be modified to provide better redundancy.

Reliability/Maintainability

9) **CLASS ISSUE**
Topic: Switchboard Wiring/GE Tech Manuals
Ref: Warranty Items: 1W318EL01, 1W319EL01, 1W320EL01
Issue: Inspections of the switchboards have revealed numerous instances of incorrectly installed wiring (wires run to wrong locations or not attached to terminal connections properly). In addition, the GE supplied technical manuals and drawings have discrepancies and missing information.
Status: This item remains a shipbuilder responsible deficiency. WHOI hired electrical consultant Bill Clewes to inspect the switchboards, document instances of wiring problems, and correct as many as possible. Recommend that additional corrective action be taken on the switchboards and that manual revisions be obtained from GE.

10) **CLASS ISSUE**
Topic: Monitoring Instrumentation
Issue: The DC side of the electrical propulsion system lacks adequate instrumentation to monitor operation of the plant.
Status: The ship was provided with imprecise needle-type gauges, which have proven unusable. These gauges are located in the Propulsion Motor Room, which is normally unmanned. In order to properly monitor the plant operation, digital meters should be installed in the MCS to provide readouts of amps and volts.

11) **CLASS ISSUE**
Topic: Engine Smoke
Issue: Engines produce an unexpected amount of exhaust smoke. Smoke in diesel exhaust is usually an indication of improper or incomplete combustion that could have an effect on fuel consumption and engine maintenance.
Status: The Caterpillar dealer has not been able to resolve this issue. Continue to investigate.

12) **CLASS ISSUE**
Topic: Main sea water cooling line isolation valve
Issue: Servicing of any of the individual engine sea water valves requires that the entire sea water system be shut down. Where shore power is not available, the ship must go dead to make repairs.
Status: As presently designed, the seawater cooling system for the engines uses a large 12 inch transverse crossover pipe as a header to provide water to each engine. When individual cutoff valves at each engine require servicing or replacement, the only way to isolate sea water from the affected valve is to close the hull valves at each end of the crossover. In this condition, none of the engines can get cooling water, so the electrical plant must be shut down. If the ship is not in a port that can provide shore power, the ship must go dead during repairs. A solution to this problem is to install an isolation valve midway in the seawater crossover so that only half of it has to be shut down at a time. In this way, half of the engines would still be available for providing electricity.

Reliability/Maintainability

13) **CLASS ISSUE**
Topic: Flush Deck Hatch to After Science Storeroom
Ref: Warranty Items: 1W031DK01, 32DK, 35DK, 38DK, and 238DK
Issue: Hatch leaks because knife edge around opening is deteriorating and is not installed correctly.
Status: Knife edge around hatch opening is corroding. In addition, knife edge is improperly located relative to gasket in hatch cover. When cover is closed, the knife edge contacts the gasket near its edge and causes the gasket to roll in its recess rather than compress and provide a seal. Knife edge should be replaced with CRES and installed in the proper location.

14) **CLASS ISSUE**
Topic: Reverse Power Relays
Ref: Warranty Item: 1W246EL01
Issue: Reverse power relays do not function properly, possibly as a result of electrical noise on the bus.
Status: The reverse power relays are installed to protect the machinery in the event a generator becomes motorized and tries to drive the engine it's mated to. The harmonic levels on the bus may be adversely affecting their operation. Recommend that replacement relays be installed which are suitable for operation with the harmonics experienced on the ship. Note that this problem is common to all the ships.

15) **CLASS ISSUE**
Topic: 12 kHz Transducer failures
Ref: Warranty Items: 1W377OP01, 1W503OP01
Issue: 12 kHz single beam transducers have failed repeatedly. On BROWN and ATLANTIS, both transducers on each ship have failed prematurely, requiring dry-docking to replace.
Status: Continue to investigate.

16) **CLASS ISSUE**
Topic: Year 2000 Effects On Software
Issue: Year 2000 date change potentially could have adverse effects on electronics and computers on the ship.
Status: WHOI initiate action to work with system manufacturers to determine if any problems exist.

17) **CLASS ISSUE**
Topic: Winch Room Insulation and Heating
Issue: Excessive bulkhead sweating is occurring on the Winch Room overhead because overhead is not insulated. In addition, space is not heated. The result is high moisture in the space, which may affect reliability and maintainability of equipment.
Status: Install electric pre-heater and overhead insulation.

Reliability/Maintainability

18) **CLASS ISSUE**
Topic: Circuit Breaker Spares
Issue: Main circuit breakers require a long lead time for replacement or repair. If the ship suffers a failure, it will be partially disabled for a significant period of time.
Status: Recommend procurement of a spare for each breaker size. When a failure occurs, the spare can be installed and the failed breaker can be shipped back for repair.

19) **CLASS ISSUE**
Topic: Z-Drive Oil Transfer
Issue: The Z-Drive oil storage tank is located in the Generator Room which is remote from the Z-Drives. Transfer of oil during a changeout or topoff requires a portable pump and a length of hose.
Status: Recommend a separate storage tank be fabricated and installed in the winch room similar to the tank installed on REVELLE.

20) **CLASS ISSUE**
Topic: Compressor for Climate Control Chamber and Scientific Freezer
Issue: Compressor is unreliable and requires frequent maintenance and repair
Status: Replace with more reliable unit.

21) **CLASS ISSUE**
Topic: Sewage pumps
Issue: Sewage pumps are unreliable and possibly inadequately sized
Status: The sewage pumps have proven to be unreliable. One has been rebuilt. One frequently trips out on overload when in transfer mode.

Quality of Life

1) **Topic:** Additional Drinking Fountains
Ref: Post Delivery Work Item (SIO-141)
Issue: There are only two drinking fountains on the vessel on the main and 01 levels. Since most of the activity on the vessel happens aft on the main deck it is essential to provide a drinking fountain on the main deck in the aft portion of the vessel.
Status: Install additional fountains.

2) **CLASS ISSUE**
Topic: Bow Thruster Noise Abatement
Ref: Post Delivery Work Item (WHOI-27)
Issue: During station keeping operations with the thruster at high power levels, airborne noise levels in the forward first platform staterooms are high. Complete next phase of bow thruster noise abatement fixes developed during PSA.
Status: The sound absorbing coating installed in the bow thruster underwater cavity and the damping tiles installed in the bow thruster machinery room have been effective. On the other hand the air injection system was not effective at all. Our acoustic consultants and engineers agree that this has the potential to even further reduce the bow thruster noise that gets into the ship. Some experimentation will be required to develop the details of the next phase, however the approach will be focused at getting more air into the water.

3) **CLASS ISSUE**
Topic: Anchor Handling Deficiency
Ref: Post Delivery Work Item (SIO-136)
Issue: When anchors are in stowed position, high seas cause them to bang against the hull creating noise in the ship.
Status: Some improvement has been made, but banging still occurs. Investigate further action.

4) **Topic:** Increase fresh water storage capacity
Issue: Fresh water storage capacity is not adequate for the length of port stays normally encountered on ATLANTIS. Watermakers cannot be operated in port because of sediment and other contamination. The ship spends much of her time in foreign ports where the water is expensive and unsafe. The quality of this water is frequently unknown and requires special treatment.
Status: Transform existing tankage into freshwater storage to allow water made at sea to carry the vessel through in ports without the imposing of water hours. Could also investigate taking seawater from a ballast tank to feed the watermakers.

Quality of Life

5) **CLASS ISSUE**
Topic: Chill/Freeze Box Odor
Ref: Post Delivery Work Item (SIO-181)
Issue: Food stores in the chilled and frozen storerooms are acquiring an unpleasant odor and taste.
Status: This problem has occurred on all the ships of the class and has persisted even though the boxes were completely cleaned and disinfected. May be a result of manufacturing materials and sealants used in construction of boxes. Investigate further action such as installing odor absorbing devices.

6) **CLASS ISSUE**
Topic: Sound Isolation between Staterooms
Ref: SOR Sec 635d
Issue: Joiner bulkheads do not extend above the ceiling panels, resulting in an open path for sound transmission between adjoining staterooms.
Status: Recommend insulation be installed in overheads on 1st platform staterooms.

WORK ITEMS NOT COMPLETED

REF	DESCRIPTION	TASK	COMMENTS
1B087DK01 2G026DK01	PROVIDE SPARE DETACHABLE LINKS AND ANCHOR CONNECTING LINKS.	25TL-1 (DW-3)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,000)
SIO #001	INSTALL PORTABLE, REMOVABLE AFT CAPSTAN.	25TL-1 (DW-4)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE (1,000)
SIO #039 1G004MD01 1G005MD01 1G006MD01 1G009MD01 1G500MD02-05	PROVIDE MEDICAL EQUIPMENT – REFRIGERATOR COUNTER, SMALL INSTRUMENT STERILIZER, SURGICAL/EXAM LIGHT AND TABLE, SAFE, I.V. POLE AND SECURING BRACKET, EMERGENCY POTABLE WATER BOTTLES, ADDL PATIENT BERTH, AND EMERG CALL IN T/S.	25TL-1 (DW-19)	PARTIALLY COMPLETED – MATERIAL PROVIDED ON SIOL ESTIMATE TO COMPLETE ($2,500)
SIO #054	INSTALL BACKUP FUEL OIL PURIFIER	25TL-2 (DW-12)	PARTIALLY COMPLETED – ESTIMATE TO COMPLETE ($18,000)
SIO #056	REDESIGN & INSTALL LARGER ROSE BOXES.	25TL-3 (DW-8)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($58,000)
SIO #075	PROVIDE A "UPS IN USE" ALARM/INDICATOR AT THE MCS CONTROL STATION.	25TL-2 (DW-13)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,000)
SIO #080 1G500MP03	ADD DISCHARGE DE-IONIZATION FILTER ON. RO UNITS.	25TL-1 (DW-23)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($6,000)
SIO #082	REMOUNT OR DIM FOLLOWING LIGHTS: RED AND GREEN LIGHTS ON ANNOUNCING SYSTEM.	25TL-4 (PD-2)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,632)
SIO #089	PROVIDE MECHANICAL EXHAUST VENTILATION AND INSTALL HULL INSULATION IN BOSUN STRM.	25TL-2 (PD-3)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($31,337)
SIO #100	SOUND POWERED PHONE SYSTEM	25TL-3 (DW-11)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($32,500)
SIO #109	MODIFY PLUMBING DRAINAGE SYSTEM TO A GRAVITY DRAIN SYSTEM.	25TL-2 (PD-5)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($3,600)
SIO #111	MODIFY ACCOMMODATION LADDER (GANGWAY) PLATFORM.	25TL-2 (PD-7)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($29,000)
SIO #122	MODIFY GENERATOR ROOM EXHAUST	25TL-4 (PD-8)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($98,300)

WORK ITEMS NOT COMPLETED

REF	DESCRIPTION	TASK	COMMENTS
SIO #124	MODIFY FLAG HOIST ARRANGEMENT.	25TL-3 (PD-3)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($4,500)
SIO #126	ADD NAV/COMM UPS.	25TL-3 (PD-4)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($5,000)
SIO #131	MOVE EXHAUST TRUNK 01 LEVEL FORWARD.	25TL-4 (PD-12)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($3,200)
SIO #139	MODIFY BRIDGEWING CONTROL STATIONS.	25TL-4 (PD-14)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($26,800)
SIO #141	INSTALL DRINKING FOUNTAINS MAIN DECK.	25TL-3 (PD-8)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($5,800)
SIO #142	INSTALL SHOWER GRAB BARS.	25TL-4 (PD-15)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($8,800)
SIO #143	INSTALL STORAGE IN VOID SPACE IN LABS.	25TL-4 (PD-16)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($8,300)
SIO #147	SOUND ISOLATE MASCERATOR.	25TL-4 (PD-18)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($28,500)
SIO #148	INSTALL PROPELLER FAIRING CONES.	25TL-4 (PD-19)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($14,000)
SIO #165	UPGRADE VERTICAL REFERENCE UNIT	25TL-4 (DW-4)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($53,000)
SIO #170	UPGRADE DOPPLER SPEEDLOG/ADCP.	25TL-4 (DW-5)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($175,000)
SIO #171	RESEARCH AND MODIFY 600V SWBD AUTOSYNC CIRCUITRY	25TL-6 (PD-1)	PARTIALLY COMLETED. ESTIMATE TO COMPLETE (40,000)
SIO #174	MODIFY FWD CARGO HATCH COVER TO LIFT-OFF TYPE.	25TL-4 (PD-25)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($2,000)
SIO #177	UPGRADE AUXILIARY SEAWATER SENSING SYSTEM	25TL-4 (PD-27)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($18,000)

WORK ITEMS NOT COMPLETED

REF	DESCRIPTION	TASK	COMMENTS
SIO #180	REROUTE CHILLWATER PIPING	25TL-4 (PD-29)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($2,000)
SIO #183	PROVIDE RADHAZ CERT DOCUMENTATION	25TL-4 (PD-31)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,000)
SIO #184	REPLACE CORRODING AND PITTING LOW-GRADE CRES HARDWARE AND FITTINGS	25TL-4 (PD-32)	PARTIALLY COMPLETE ($1,000 WHOI FUNDED). ESTIMATE TO COMPLETE ($7,000)
SIO #186	INSTALL DECK DRAIN IN BOS'N STOREROOM	25TL-4 (PD-33)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,300)
SIO #187	INSTALL SUITABLE STOWAGE FOR SHIP'S FENDERS	25TL-4 (PD-34)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($3,000)
SIO #192	MODIFY ENCLOSED PART OF FOOD SERVICE DRESSER TO PROVIDE STORAGE.	25TL-4 (PD-36)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($12,500)
SIO #194	MODIFY SUPPLY AIR INTAKE TO BOW THRUSTER AND MG RM TO PREVENT GREEN WATER INTAKE.	25TL-4 (PD-37)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE (10,000)
SIO #197	REPLACE FERROUS HOT WATER RECIRC PUMPS	25TL-4 (PD-40)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($5,800)
WHOI #004	PROVIDE WINCH READOUTS ON BRIDGE	25TL-2 (PD-10)	MATERIAL ORDERED ON SIOL. HAS NOT ARRIVED. ESTIMATE TO COMPLETE ($1,500)
WHOI #006 1G500AX12 1G500AX14	BOW THRUSTER STEERING MOTOR: MODIFY BREDGE CONSOLE TO INDICATE "STEERING MOTOR RUNNING" AND INSTALL FAILURE ALARM.	25TL-2 (PD-12)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($5,000)
WHOI #007 1G500SP03	ADD DISPOSAL IN GALLEY SERVICE SINK.	25TL-2 (PD-13)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,000)
WHOI #032	WORKBOAT LAUNCH SYSTEM		FEASIBILITY STUDY COMPLETED. WORK NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($8,500)
WHOI #035	SECURE ALVIN SLED	25TL-5 (PD-2)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($10,000)
WHOI #044	CONVERT ALL ELECTRICAL CONTROLLERS, SWITCHES, OUTLETS, ETC IN ALVIN HANGER TO WATERTIGHT TYPE.	25TL-5 (PD-11)	PARTIALLY COMPLETED BY HMI. ESTIMATE TO COMPLETE ($5,000)

WORK ITEMS NOT COMPLETED

REF	DESCRIPTION	TASK	COMMENTS
WHOI #045	BATTERY CHARGER POWER QUALITY		NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($10,000)
WHOI #047	INSTALL ADD'L 120V SERVICE IN ALVIN SHOPS	25TL-5 (PD-13)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($3,000)
WHOI #050	PERFORM FEASIBILITY STUDY TO REMOVE MAIN DECK AFTERMOST DOOR AND RE-ARRANGE DOOR SWING DIRECTIONS	25TL-6 (PD-8)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($2,500)
WHOI #051	MODS TO 01 DK AFT OF PORT CRANE TO ACCOMMODATE VAN.	25TL-6 (PD-9)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($10,000)
WHOI #056	MODIFY ALVIN DEHUMIDIFIER	25TL-6 (PD-14)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,500)
WHOI #058	INVESTIGATE BAD TASTE IN FOOD BOXES	25TL-6 (PD-16)	NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($2,000)

CARD SCREENING CODES

GA - GOVERNMENT RESPONSIBLE, AUTHORIZED FOR ACCOMPLISHMENT
GF - GOVERNMENT RESPONSIBLE, SHIP'S FORCE ACTION
KA - CONTRACTOR RESPONSIBLE, AUTHORIZED FOR ACCOMPLISHMENT

DEPARTMENT CODES

AS - ANTI-SUBMARINE
AX - AUXILIARIES
CC - COMMAND, CONTROL & COMMUNICATIONS
DC - DAMAGE CONTROL
DK - DECK
EL - ELECTRICAL
EP - ENVIRONMENTAL PROTECTION
HB - HABITABILITY
MD - MEDICAL
MP - MAIN PROPULSION
NV - NAVIGATION
OH - OCCUPATIONAL HEALTH/SAFETY
OP - OPERATIONS
SP - SUPPLY

STATUS CODES

O - OPEN

ADDITIONAL CODES

S - SAFETY ITEM
M/R - "M"-MAINTAINABILITY OR "R"-RELIABILITY IS QUESTIONABLE
U - MISSION DEGRADABLE ITEM

Open Builder's Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1B008EP01	GA	**SEWAGE EXHAUST VENT** THERE WAS NO EXHAUST VENTILATION TERMINAL INSTALLED IN THE COAMING AREA AROUND THE MARINE SANITATION DEVICE TO REMOVE HEAVIER THAN AIR GASES INSIDE OF THE COAMING AREA. RECOMMEND EXHAUST VENT BE INSTALLED WITHIN 9 INCHES OF COAMING AREA DECK.	25TL-1 (DW-18)

Open Acceptance Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1G029AX03	GF	**POTABLE WATER PRESSURE TANK** THE POTABLE WATER PRESSURE TANK HAD THE FOLLOWING DEFICIENCY: THERE WAS NO AIR PRESSURE GAUGE INSTALLED.	
1G002MD01	GF	**EMERG MEDICAL OXYGEN** THERE WAS NO EMERGENCY MEDICAL OXYGEN PROVIDED OR PROVISION TO ADMINISTER IT IN THE HOSPITAL.	
2K005OH01	KA	**HALOCARBON EXHAUST VENTILATION** EXHAUST TERMINALS WERE NOT LOCATED 9" ABOVE DECK IN THE IMMEDIATE VICINITY OF THE A/C AND REEFER MACHINERY.	
2K006OH01	KA	**A/C MACHINERY EXHAUST VENTILATION** THE AIR CONDITIONING MACHINERY LOCATED IN THE WINCH ROOM, 2-99-0 DID NOT HAVE AN EXHAUST SYSTEM TERMINAL LOCATED APPROXIMATELY NINE INCHES ABOVE THE DECK IN THE IMMEDIATE VICINITY OF THE MACHINERY.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1G514AS06	GA	**ALVIN DSV LAUNCHING SYSTEM DOCUMENTATION** THE DOCUMENTATION FOR THE "ALVIN" DSV LAUNCHING SYSTEM IS INCOMPLETE IN THAT NO PARTS LISTS ARE PROVIDED WITH THE TECHNICAL MANUAL BLUEPRINTS MAKING IT EXTREMELY DIFFICULT IF NOT IMPOSSIBLE FOR THE SHIP'S FORCE TO ORDER REPLACEMENT PARTS AND SPARES. PROVIDE SERVICE TO BRING PARTS LISTS TO ACCOMPANY AN0D COMPLIMENT B-P PROVIDED IN VENDOR MANUAL.	
1G500AX12	GA	**BOW THRUSTER** BOW THRUSTER STEERING FAILURE ALARM NOT PROVIDED.	(WHOI-006)
1G500AX14	GA	**INDICATORS, STEERING MOTORS** THE BRIDGE FWD CONTROL CONSOLE DOES NOT HAVE AN INDICATOR FOR "STEERING MOTOR RUNNING" AS REQUIRED BY ABS SECTION5.15.14(E). THIS PERTAINS TO THE BOW THRUSTER STEERING MOTOR	(WHOI-006)
1G500EP03	GA	**SEWAGE PUMP COAMING** TWO OF TWO SEWAGE PUMPS AND ASSOCIATED PIPING WERE NOT ENCLOSED IN A 24 INCH HIGH COAMING (WITH FLOODING DETECTOR), THERE WERE NO SPRAY SHIELDS AROUND PACKING GLANDS, AND A DRAIN/SPILL SUMP WAS NOT PROVIDED TO CATCH AND EVACUATE SEWAGE IN THE EVENT OF A SPILL. EXISTING COAMING WAS TOO LOW AND THERE WAS A HOLE IN ONE SIDE OF THE COAMING WHICH ALLOWED DRAINAGE INTO THE GENERATOR ROOM BILGE. IN THE EVENT OF A SEWAGE SPILL, THE GENERATOR ROOM AND BILGE WILL BE CONTAMINATED WITH SEWAGE. RECOMMEND CORRECT COAMING, FLOODING DETECTOR, SPRAY SHIELDS AND SUMP BE INSTALLED TO PROVIDE PROTECTION FOR SURROUNDING SPACE AND EQUIPMENT.	(SIO-163)
1G500EP04	GA	**CHT SANITATION EQUIPMENT** THERE WAS NO DEEP SINK, PAPER TOWEL HOLDER, OR SOAP DISPENSER NEAR THE MARINE SANITATION DEVICE (MSD) FOR HANDWASHING AND/OR DECONTAMINATION OF TOOLS FOR PERSONNEL INVOLVED IN MSD MAINTENANCE/REPAIR. RECOMMEND SINK, TOWEL HOLDER AND SOAP DISPENSER BE INSTALLED NEAR TREATMENT TANK.	(SIO-163)
1G500EP07	GA	**SEWAGE TANK SOUNDING TUBE** SEWAGE TANK SOUNDING TUBE WAS LOCATED OUTSIDE OF COAMING AREA.	(SIO-163)
1G500EP08	GA	**FIREMAIN FLUSH** THERE WAS NO SEWAGE FLUSHING CONNECTION FROM THE FIREMAIN TO THE SEWAGE PUMP DISCHARGE LINE UPSTREAM OF THE DISCHARGE PLUG AND CHECK VALVES. RECOMMEND FLUSHING SYSTEM BE INSTALLED TO PROVIDE SANITARY WASHDOWN OF DISCHARGE CONNECTION AND HOSE PRIOR TO DISCONNECTING/HANDLING BY PERSONNEL.	(SIO-163)

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1G500EP09	GA	**SEWAGE SYSTEM EFFLUENT SAMPLY VALVE** THE MSD EFFLUENT DISCHARGE LINE IS NOT PROVIDED WITH A SAMPLE VALVE FOR SAMPLING OF THE TREATED EFFLUENT.	(SIO-163)
1G500EP10	GA	**MARINE SANITATION DEVICE COAMING** THE MSD UNIT IS NOT PROVIDED WITH A SEWAGE CONTAINMENT COAMING. A COAMING IS PROVIDED FOR THE VACUUM PUMPS.	(SIO-163)
1G500EP11	GA	**SEWAGE PUMP GAUGE LINE SEALS** SEWAGE PUMP SUCTION AND DISCHARGE GAUGES DID NOT HAVE DIAPHRAGM SEALS. WITHOUT THESE SEALS, THERE IS A POSSIBILITY OF SEWAGE CLOGGING GAUGE LINES. PIPE NEEDS TO BE ½".	(SIO-163)
1G500EP12	GA	**SEWAGE TANK MANHOLE COVERS** THE VCHT TANK MANHOLE COVER AND THE MSD TANK MANHOLE COVER WERE NOT PROVIDED WITH A MONEL ½ INCH GAS SAMPLING VALVE.	(SIO-163)
1G500EP13	GA	**SEWAGE TANK FIREMAIN FLUSH NOZZLES** THERE WERE NO SALTWATER WASHDOWN NOZZLES INSTALLED IN THE SEWAGE TANK TO PROVIDE PERIODIC FLUSHING OF THE TANK SIDES TO REMOVE ACCUMULATIONS OF SEWAGE.	(SIO-163)
1G500EP14	GA	**POTABLE WATER** A POTABLE WATER LINE WITH TWO VALVES AND A UNION FITTING WERE LOCATED WITHIN THE SEWAGE SYSTEM COAMING AREA, APPROX. 1 INCH ABOVE THE DECK. THIS COULD RESULT IN CONTAMINATION OF THE POTABLE WATER SYSTEM IF IN THE EVENT, THE VALVE FLANGE JOINTS OR UNION FITTING BECOME LOOSE. THE LINES SHOULD BE RAISED ABOVE THE FLOODABLE LEVEL OF THE COAMING.	(SIO-163)
1G500EP15	GA	**GAUGES** THERE WAS NO PRESSURE GAUGE INSTALLED AT THE SHIP'S SERVICE LP AIR LINE FOR EACH AIR-OPERATED SEWAGE DISCHARGE VALVE. THE TECH MANUAL TROUBLESHOOTING GUIDE REQUIRES THAT ADEQUATE AIR PRESSURE BE KNOWN DURING MAINTENANCE/REPAIR.	(SIO-163)
1G500MD02	GA	**MEDICAL TREATMENT** THE SHIP WAS NOT OUTFITTED WITH A SMALL INSTRUMENT STERILIZER, MOUNTING SHELF AND ELECTRICAL CONNECTION.	(SIO-39)
1G500MD03	GA	**MEDICAL TREATMENT** THE SHIP WAS NOT OUTFITTED WITH A SURGICAL/EXAM LIGHT AND SURGICAL/EXAM TABLE.	(SIO-39)
1G500MD04	GA	**MEDICAL TREATMENT** THE SHIP WAS NOT OUTFITTED WITH I.V. POLES AND SECURING BRACKETS.	(SIO-39)
1G500MD05	GA	**MEDICAL TREATMENT** THE SHIP WAS NOT OUTFITTED WITH EMERGENCY POTABLE WATER BOTTLES AND STORAGE BRACKETS OR INSTALLED EMERGENCY POTABLE STORAGE TANK.	(SIO-39)

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1G525MP01	GA	**GENERATOR ROOM VENTILATION** DURING THE FULL POWER RUN THERE WAS SIGNIFICANT SMOKE SEEN FROM THE MAIN PROPULSION DIESELS. ONLY ONE AIR FILTER RESTRICTION INDICATOR WAS OPERATIONAL WHICH WAS IN THE YELLOW ZONE (GREEN,YELLOW,RED) WITH A NEW AIR FILTER INSTALLED. AIR MANIFOLD PRESSURE ON ALL ENGINES WERE LOW DURING THE FULL POWER TRIAL. THESE INDICATIONS STRONGLY SUGGEST THAT THERE IS INSUFFICIENT AIR FLOW IN THE SPACE FOR PROPER COMBUSTION OF THE SSDGs.	TECH ISSUE
1G502AS01	GF	**SEABEAM ECHO SOUNDER** THE SEABEAM 2100 ECHO SOUNDER WAS NOT DEMONSTRATED. THE SYSTEM WILL RECEIVE NUMEROUS SOFTWARE AND HARDWARE UPGRADES DURING PSA. RECOMMEND SYSTEM BE FULLY DEMONSTRATED DURING POST PSA SEA TRIALS.	TECH ISSUE
1G503AS03SU	GF	**SEABEAM** THE TIME SIGNAL TO THE SEABEAM FROM THE SIMRAD/ROBERTSON DPS COMPUTER HAS A BAD DRIFT. THE SEABEAM REQUIRES QUALITY GPS TIME. THIS IS A C2 LEVEL CASREP. PROVIDE THE SERVICES TO OBTAIN AND DELIVER QUALITY GPS TIME TO THE SEABEAM.	TECH ISSUE
1G503AS10	GF	**SEABEAM** EXPERIENCED THE FOLLOWING PROBLEM WITH THE "TIME SYNCHRONIZATION." "AS DELIVERED, THE TIME SYNCHRONIZATION FOR THE SYSTEM WAS DONE BY USING THE NAVIGATION TIME GENERATED BY THE ROBERTSON DP COMPUTER SYSTEM. THE DRIFT IN THIS CLOCK SEEMED TO BE MORE THAN A SECOND OR TWO PER DAY. WHEN WE SWITCHED TO USING THE SIS NAVIGATION FEED, WE DID SOMEWHAT BETTER." PROVIDE SERVICES TO CORRECT THIS ISSUE.	TECH ISSUE
2G506AS01	GF	**SCIENTIFIC FREEZER COOLER ROOM** DECK DRAIN 1-44-2 PROTRUDED ABOVE THE DECK AND MATTING PROHIBITING PROPER DRAINAGE OF THE COMPARTMENT AND ALLOWING WATER TO FLOOD THE ADJACENT BIOLOGY AND ELECTRONIC LABS.	
2G507AS01	GF	**WET LAB ACID FUME HOOD** WET LAB ACID FUME HOOD HAD THE FOLLOWING DEFICIENCIES: THERE WAS NO LOCAL ON/OFF SWITCH IN THE SPACE. SWITCH IS LOCATED IN THE BIOLOGY LAB. THERE WERE FERROUS BOLTS PROTRUDING INTO THE FUME HOOD. FUME HOOD CABINET LATCH WAS BROKEN.	SWITCH INSTALLED. REPLACE BOLTS AND REPAIR CABINET LATCH.
1G500AX06	GF	**AUX SW CIRC PUMPS** THE AUXILIARY SALTWATER CIRC PUMP CASINGS WERE CAST IRON. ALL ASSOCIATED PUMP PIPING WAS COPPER NICKEL. THIS CONFIGURATION COULD CAUSE ACCELERATED CORROSION OF THE PUMP CASING AND THE ASSOCIATED PIPING. SOR SEC 078 PROHIBITED THE JOINING OF DISSIMILAR METALS WHICH ARE ELECTROLYTICALLY INCOMPATIBLE.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1G500AX16	GF	**BOW THRUSTER COOLING WATER PUMP** REQUEST THAT BOW THRUSTER COOLING PUMP BE SHIFTED FROM THE BILGE BELOW THE DECK PLATES TO A NEW POSITION ABOVE THE DECK PLATES. THE NEW JUXTAPOSITION WILL FACILITATE EASIER MAINTENANCE AND REDUCE CHANCE OF WATER DAMAGE DUE TO HIGH BILGE LEVELS.	
1G511AX01	GF	**A/C UNIT** THE LOW CHILL WATER FLOW SWITCH (PRESSURE DIFFERENTIAL SENSING SWITCH ACROSS CHILLER) WAS CONFIGURED AS A PRESSURE SWITCH SENSING CHILL WATER INLET PRESSURE TO CHILLER ON #2 A/C UNIT. SWITCHES ON #1 AND #3 A/C UNITS WERE CONFIGURED TO SENSE DIFFERENTIAL PRESSURE ACROSS CHILLER. FURTHERMORE, THIS SWITCH WAS NOT REFERRED TO IN THE MANUFACTURER'S TECH MANUAL, THE CORRECT SETTING WAS UNDETERMINED, AND THERE WAS CONCERN THAT THE SWITCH WAS NOT SUFFICIENTLY SENSITIVE. SHIP'S FORCE CHANGED THE SWITCH CONFIGURATION ON #2 A/C UNIT DUE TO A CONCERN THAT THE SWITCH WAS NOT SENSITIVE ENOUGH TO SENSE A LOW FLOW CONDITION IN THE CHILLER. NAMEPLATE DATA ON THE SWITCH INDICATED A PRESSURE SENSING RANGE BETWEEN 1.4 AND 18 PSIG. SHIP'S FORCE MEASURED THE PRESSURE DIFFERENTIAL ACROSS THE CHILLER DURING NORMAL OPERATION AT 0.5 PSIG. RECOMMEND FURTHER INVESTIGATION.	
1A518AX01	GF	**A/C UNITS** RECOMMEND INSTALLATION OF REFRIGERANT BOTTLE STORAGE RACKS ON THE UPPER LEVEL OF THE ENGINEER ROOM (LOCATION OF TWO A/C UNITS AND TWO REFRIGERATION UNITS).	
2G525AX01	GF	**BOW THRUSTER** BOW THRUSTER SHAFT SEAL PACKING GLAND WAS CORRODED.	
2G527AX01	GF	**UNCONTAMINATED S/W SYSTEM** UNCONTAMINATED S/W PUMP FOUNDATION WAS HEAVILY CORRODED BENEATH THE PUMP CASING.	
2G532AX01	GF	**PROPULSION MOTOR** THERE WAS A LARGE ACCUMULATION OF SALT RESIDUE AROUND THE PORT PROPULSION MOTOR COOLER S/W REGULATING VALVE STEM.	
2G502CC01	GF	**MAST** THERE WAS AN UNSECURED DEAD-ENDED CABLE HANGING BELOW THE TOP PLATFORM ON THE MAST.	
1G500DC03	GF	**GAS FREE EQUIPMENT** THE SHIP WAS OUTFITTED WITH A FLAME SAFETY LAMP. RECOMMEND A MODERN FOUR GAS ANALYZER, PASSPORT PERSONAL ALARM KIT MODEL 3210 OR THE EQUIVALENT, BE PROVIDED.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
2G510DC02	GF	**DRAINAGE – MN/SEC DRN VALVES** THE FOLLOWING DEFICIENCY WAS NOTED IN THE SECONDARY DRAINAGE SYSTEM: 3. CENTER BILGE SUCTION POCKET METAL COVER WAS CHIPPED WHICH COULD ALLOW FOULING OF THE SUCTION PIPING LINE.	
2G512DC02	GF	**TANKS/VOIDS** THE FOLLOWING TANK DEFICIENCY WAS NOTED DURING OPEN AND INSPECTION OF SW BALLAST TANK 4-32-2: 2. BULKHEADS EXHIBITED A BAND OF RUST APPROXIMATELY 4" ALL AROUND THE ENTIRE SPACE (BY WATERLINE).	
2G517DC01	GF	**ELECTRIC SUBMERSIBLE PUMP** THE SHIP HAD RECENTLY RECEIVED A SUBMERSIBLE PUMP RATED AT 230VAC VICE 440VAC.	
1G500DK26	GF	**TRACTION WINCH** ARRANGEMENT OF HEEL BLOCK DIRECTLY ABOVE PORT SIDE MANUAL BRAKE DISK AND CALIPER ASSEMBLY IS CAUSING SALT WATER TO DRIP ONTO BOTH BRAKE AND CALIPER ASSEMBLY RESULTING IN RUSTING OF SAME. THIS SITUATION WILL CAUSE AN EARLY FAILURE OF UNIT AND/OR EXCESSIVE MAINTENANCE BY SHIP'S FORCE. PROVIDE ANY NECESSARY MATERIALS AND LABOR TO CORRECT THE ABOVE PROBLEM TO THE SATISFACTION OF SHIP'S FORCE.	
1G500DK27	GF	**WATERTIGHT DOOR LABELING** THE MASTER MODE SWITCH LABEL FOR THE WATERTIGHT DOORS LOCATED ON THE PILOT HOUSE AND MAIN CONTROL STATION CONSOLE READS ELEC HYD WTRTT SLIDING DOOR MASTER SW, BUT IN FACT SWITCH ONLY CLOSES WATERTIGHT DOORS 94 & 90. LABEL NEEDS TO READ ELECT HYDR WTRTT SLIDING DOOR MASTER SW CLOSES WTRTT DOORS 64 & 90 ONLY. WTRTT DOORS 22, 99 & 110 NEED TO BE CLOSED BY THEIR INDIVIDUAL PUSH BUTTONS.	
2G512DK01	GF	**CAPSTAN** THE CAPSTAN SAFETY/OPERATING INSTRUCTIONS WERE NOT POSTED.	
1G500EL85US	GF	**3JV PHONE SYSTEM** INSTALL A CONVENTIONAL SOUND POWERED PHONE IN WINCH ROOM AT FIXED CO2 CONTROLS FOR PROPULSION MOTOR COMPARTMENT AND ENGINE ROOM. UTILIZE CIRCUIT 3JV AND M/N:SLFR,MANU. HOSE-MCCANN PHONE FOR ABOVE INSTALLATION.	
1G500EL86US	GF	**PHONE CIRCUIT 3JV** INSTALL CONVENTIONAL SOUND POWERED PHONE(MODEL NO: SFLR MANUF: HOSE-MCCANN) IN THE EMERGENCY GENERATOR COMPARTMENT 01DECK @FR60.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1G500EL87US	GF	**3JV PHONE SYSTEM** INSTALL CONVENTIONAL SOUND POWERED PHONES AT THE FOLLOWING LOCATIONS STBD. FUELING STATION;MAIN DECK @ FR64;PORT FUELING STATION;MAIN DECK@ FR88 ;MAIN FUELING STATION STBD LOWER ENGINE ROOM @FR88. UTILIZE THE 3JV SYSTEM TO INTERCONNECT THE ABOVE SOUND POWERED PHONE SETS. UTILIZE M/N;SFLR,MANUF. HOSE-MCCANN PHONES FOR THE ABOVE INSTALLATION.	
2G508EL01S	GF	**WELDING MACHINE** THE WELDING MACHINE, INSTALLED IN THE GENERAL WORKSHOP, GROUND LEAD WAS CONNECTED TO THE SHIPS HULL USING A CLAMP VICE A THREADED FASTENER.	
2G509EL01	GF	**LIGHTING** STANDING LIGHT LOCATED ON THE 03 LEVEL FRAME 50 STBD SIDE HAD HEAVY CONDENSATION INSIDE THE GLOBE.	
1G500EP23	GF	**FUEL OIL TRANSFER SYSTEM** THE JUXTAPOSITION OF THE EMERGENCY FUEL TRANSFER STOP BUTTON AND THE PORT SIDE MAIN DECK FUELING STATION PRECLUDES TIMELY STOPING OF THE TRANSFER PUMP BY THE OPERATOR AT THE PORT SIDE STATION. RELOCATE STOP BUTTON TO MAKE SAME MORE ACCESSIBLE BY THE OPERATOR AT THE PORT SIDE FUELING STATION.	
1G502EP01	GF	**OWS-EFFLUENT** THE OIL WATER SEPARATOR FAILED FUNCTION, AND THE FOLLOWING DEFICIENCIES WERE NOTED: 1. THE FOAM GASKETS INSTALLED PER MANUFACTURER'S SPECIFICATIONS UNSEAT DURING EXTENDED OPERATION AND WERE REPLACED BY THE SHIP WITH RUBBER GASKETS. THESE RUBBER GASKETS FAILED TO PROVIDE A SUFFICIENT SEAL, RESULTING IN AIR LEAKAGE AND NO SUCTION. 2. THE EXISTING VIKING GEAR TRANSFER PUMP WAS NOT RATED FOR SALT WATER USE AND WAS FOUND WORN AND CORRODED.	
2G504EP01	GF	**OWS – OPA WARNING SIGNS** OIL POLLUTION ABATEMENT SIGNS WERE NOT CONSPICUOUSLY POSTED AT THE FOLLOWING LOCATIONS: 1. PUMP CONTROLLERS 2. OWS CONTROLLER THESE SIGNS MUST STATE: "DISCHARGE OF OIL PROHIBITED THE FEDERAL WATER POLLUTION CONTROL ACT PROHIBITS THE DISCHARGE OF OIL OR OILY WASTE INTO OR UPON THE NAVIGABLE WATERS OF THE UNITED STATES, OR THE WATERS OF THE CONTIGUOUS ZONE, OR WHICH MAY AFFECT NATURAL RESOURCES BELONGING TO, APPERTAINING TO, OR UNDER THE EXCLUSIVE MANAGEMENT AUTHORITY OF THE UNITED STATES, IF SUCH DISCHARGE CAUSES A FILM OR DISCOLORATION OF THE SURFACE OF THE WATER OR CAUSES A SLUDGE OR EMULSION BENEATH THE SURFACE OF THE WATER. VIOLATORS ARE SUBJECT TO SUBSTANTIAL CIVIL PENALTIES AND/OR CRIMINAL SANCTIONS INCLUDING FINES AND IMPRISONMENT."	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
2G505EP01	GF	**OWS-RELIEF VALVE** A RELIEF VALVE WAS NOT INSTALLED ON THE DISCHARGE PIPING SIDE OF THE OWS PUMP TO TO PREVENT POSSIBLE SEAL RUPTURE OR PRESSURE GAGE DAMAGE.	
2G506EP01	GF	**CHT-VALVE LEAKING** THE SEA WATER SUPPLY CUTOUT VALVE TO THE MSD UNIT WAS LEAKING AT THE PACKING NUT.	
2G508EP01	GF	**CHT-GRAY WATER CLEANOUT CONNECTION** THE SEWAGE HEADER CLEANOUT WAS MISSING THE BALL VALVE AND FIRE HOSE CONNECTION FOR MAINTENANCE.	
2G509EP01	GF	**CHT-LACK OF BALL VALVES** THE DECK RISER CONNECTION FOR SEWAGE DISCHARGE AND THE SEWAGE OVERBOARD DISCHARGE PIPING BULKHEAD STOP VALVE WERE GATE VICE FULL PORT BALL VALVES. CLOGGING AND FOULING OF THE GATE VALVES HAS ALREADY OCCURRED, REQUIRING DISASSEMBLY AND CLEANING.	
2G510EP01	GF	**CHT PLACARD – CHT DECK RISER AND SYSTEM** THE FOLLOWING REQUIRED PLACARD WAS NOT POSTED AT THE DECK RISER AND IN THE SEWAGE PLANT AREA: "SANITARY AND HEALTH PRECAUTIONS 1. PERSONNEL SHALL NOT EAT, DRINK OR SMOKE DURING HOSE CONNECT OR DISCONNECT PROCEDURES. 2. UPON COMPLETION OF HOSE CONNECT AND DISCONNECT PROCEDURES, PERSONNEL SHALL WASH HANDS, LOWER ARMS AND FACE, IN THAT ORDER, WITH HOT POTABLE WATER."	
2G512EP01	GF	**CHT-DECK RISER AND KEEPER CHAINS** THE SEWAGE OVERBOARD DECK RISER WAS MISSING THE KEEPER CHAIN.	
2G513EP01	GF	**CHT-PRESSURE GAUGES** 1. THE SEWAGE PUMP DISCHARGE PIPING WAS NOT PROVIDED WITH DISCHARGE PRESSURE GAGES. 2. THE ORCA II SALT WATER SUPPLY PRESSURE GAGE WAS INOPERABLE.	
2G516EP01	GF	**CHT-LABELING** 1. LABEL PLATES WERE NOT PROVIDED TO IDENTIFY SEWAGE PUMPS #1 AND #2. 2. ALL THE VALVES ON THE ORCA II MSD SYSTEM WERE MISSING LABEL PLATES. 3. THE AIR REGULATED VALVE FOR SEWAGE PUMP #2 WAS MISSING THE OPEN AND CLOSED INDICATOR AND LABEL PLATE.	
2G518EP01	GF	**CHT-SCHEMATIC FOR SYSTEM** THERE WAS NO ORCA II PIPING SCHEMATIC INSTALLED AT THE ORCA II SYSTEM. THE SCHEMATIC PROVIDED WAS ACTUALLY FOR THE SEWAGE TREATMENT PLANT.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
2G519EP01	GF	**MEDICAL WASTE** PERSONNEL RESPONSIBLE FOR THE PROCESSING AND DISPOSAL OF MEDICAL WASTE WERE NOT TRAINED TO ENSURE THAT SUCH ACTIONS COMPLIED WITH THE REQUIREMENT GOVERNING THIS WASTE.	
1G500HB06	GF	**SHIP'S ENTERTAINMENT SYSTEM** WHEN USING THE SHIP'S ANTENNA CONNECTIONS IN THE INTERIOR STATEROOM EXCESSIVE NOISE AND VIRTUALLY NO RECEPTION WAS RECIEVED. THE SHIP'S POSITION AT THIS TIME WAS FIFTY MILES OFF THE EASTERN USA SEABOARD. PROVIDE SERVICE TO MAKE THE SHIP'S ANTENNA SERVICE TO THE STATEROOMS MORE RECEPTIVE.	
1G500HB11	GF	**SCIENTIFIC CLIMATE CONTROL COMPRESSORS** RESILIENT MOUNTS FOR THESE PIECES OF EQUIPMENT ARE INSUFFICENT. WHEN EITHER OR BOTH SCIENTIFIC CLIMATE CONTROL COMPRESSOR IS RUNNING THERE IS UNACCEPTABLE LEVELS OF NOISE AND VIBRATION THAT IS BEING TRANSMITTED THROUGH THE DECK TO THE BERTHING AREA DIRECTLY BELOW THESE UNITS. PROVIDE SERVICES TO CORRECT THIS SIUTATION. ONCE CORRECTION HAS BEEN MADE DEMONSTRATE TO SHIPS' FORCE.	
1G501HB01S	GF	**STATEROOM CONDITION** NUMEROUS STATEROOMS ASSIGNED TO SHIP'S CREW HAD BEEN MODIFIED FROM THE ORIGINAL INSTALLATION RESULTING IN EXCESSIVE NUMBER OF HOLES IN BULKHEAD SHEATHING, DAMAGE TO CARPETS, REMOVAL/LOSS/MISPLACEMENT OF INSTALLED EQUIPMENT INCLUDING LIFEJACKETS, EEBD'S AND EXPOSURE SUITS. INSTALLATION OF PERSONAL ITEMS WILL RESULT IN PERMANENT DAMAGE TO LOCKERS, BERTHS, AND BULKHEADS, WHEN THESE ITEMS ARE REMOVED. THE APPARENT UNCONTROLLED MANNER IN WHICH THESE CHANGES HAVE BEEN ACCOMPLISHED HAS AESTHETICALLY AGED THESE SPACES BEYOND WHAT WOULD NORMALLY BE EXPECTED IN SUCH A SHORT PERIOD OF TIME. EXAMPLES INCLUDED: 2-40-4 (BY FAR THE WORST), 2-40-3, 01-27-6, 01-16-3, 01-21-2, 02-42-6	
2G502HB01S	GF	**FLAMMABILITY** SIGNIFICANT AMOUNTS OF WOOD FURNISHINGS HAD BEEN INSTALLED IN VIRTUALLY ALL CREW AND SCIENTIST LIVING SPACES CONTRARY TO ORIGINAL CONSTRUCTION REQUIREMENTS. WHILE 46CFR DOES NOT SPECIFICALLY PRECLUDE THE USE OF WOOD PRODUCTS, THE INTRODUCTION OF SUCH MATERIAL SHOULD BE MINIMIZED. WHEN EQUAL QUALITY METAL FURNISHINGS ARE AVAILABLE AN EFFORT SHOULD BE MADE TO BUY THESE ITEMS OR TO USE MATERIALS THAT MINIMIZE THE RISK OF FIRE.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
2G503HB01S	GF	**FURNITURE, SECURE** 1. THERE WERE NUMEROUS UNSECURED LOCKERS, TABLES, FILING CABINETS, DESKS, PERSONAL ELECTRONIC EQUIPMENT, ETC. EXAMPLES INCLUDED: 2-49-1, 2-49-3, 2-40-1, 2-40-2, 01-27-1,01-27-2, 01-27-6, 01-22-1, 01-16-3, 01-21-2, 02-42-6, 02-57-1, 02-55-2 2. COMPUTER WORKSTATION DRAWERS, INSTALLED IN SCIENTIST STATE ROOMS, DID NOT HAVE POSITIVE CLOSURE LATCHES. DRAWERS WERE TAPED TO KEEP THEM CLOSED DURING SHIP MOVEMENT.	
2G504HB01S	GF	**PHYSICAL FIT RM** EQUIPMENT IN THE PHYSICAL FITNESS ROOM WAS NOT PROPERLY SECURED TO PREVENT PERSONNEL INJURY FROM SHIFTING APPARATUS.	
2G505HB01	GF	**JOINER DOORS** SLIDE BOLT ON DOOR TO T/S ENCLOSURE WAS MISSING.	
2G506HB01	GF	**SHEATHING OVERHEAD** OVERHEAD SHEATHING PANEL WAS MISSING.	
1G500MD06	GF	**BROMINE LOCKER** THERE WAS NO BROMINE STORAGE LOCKER PROVIDED ON THE SHIP.	
1G500MP13US	GF	**HVAC DRAIN LINES (PMR)** P/S PROPULSION MOTOR ROOM COOLING HEAT EXCHANGER CONDENSATE DRAIN LINES ARE MISSING ISOLATION VALVES AT THE SKIN OF THE SHIP. PROVIDE AND INSTALL ISOLATION VALVES FOR SAID HEAT EXCHANGER DRAIN LINES.	
1G501MP01	GF	**FUEL OIL COOLERS** THE GENERATOR FUEL OIL COOLERS AND ASSOCIATED PIPING (RUBBER AND HARD PIPED) VIBRATED EXCESSIVELY DURING ENGINE OPERATION. NUMEROUS BREAKS IN THE COOLER SUPPORT BRACKETS HAVE OCCURRED. THIS CONDITION ALLOWED FUEL OIL TO SPRAY INTO THE ENGINEROOM WHEN PIPING WHICH IS HARD PIPED INTO THE TOP OF THE COOLER HAS CRACKED.	
1G504MP01	GF	**FUEL OIL SERVICE TANK** FUEL OIL SERVICE/DAY TANK WAS INSPECTED AND FOUND TO HAVE THE FOLLOWING DEFICIENCIES: 1. USE OF FSS-2 CABLE FOR THE TLI SYSTEM WITHOUT NITRILE BUSHINGS IN THE CABLE CLAMPS WILL ALLOW FOR FUEL IMPREGNATION AND FAILURE OF THE CABLE. 2. THE FUEL OIL SERVICE TANK HAD A BLACK SLIME ALONG THE OUTER SLOPED BULKHEAD OF THE TANK.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1G505MP01	GF	**EMERGENCY DIESEL ENGINE** THE FOLLOWING DISCREPANCIES WERE NOTED: 1. THE ENGINE MANOMETER WAS EMPTY. 3. THE FUEL OIL FILTERS DID NOT HAVE ENCLOSURES (SPRAY BOX). 4. THE FUEL OIL AND LUBE OIL PRESSURE GAUGES, AND JW TEMPERATURE GAUGES WERE OVERDUE FOR CALIBRATION. 5. NUMEROUS RUBBER HOSES ON THE ENGINE BLOCK WERE PAINTED OVER. 6. THE FUEL INJECTION PUMP HIGH PRESSURE LINE OVERFLOW ALARM IS NOT CONNECTED. THE SENSOR WAS MISSING AS WELL AS THE HOOKUP WIRES (ALARM INDICATOR WAS PRESENT). 7. THE LOW LUBE OIL ALARM WAS NOT DEMONSTRATED.	
1G509MP01	GF	**FUEL OIL COOLER** #1 SSDG FUEL OIL COOLER WAS INSPECTED AND FOUND TO HAVE THE FOLLOWING: 1. HEAVY SEA WATER GROWTH CONTAMINATION. 2. CORROSION PITTING OF THE TUBE SHEET AND TUBES (TUBES ARE NOT Cu-Ni).	
1G510MP01	GF	**GAUGES/INSTUMENTS** THE FOLLOWING GAUGES WERE OVERDUE FOR CALIBRATION: 1. #1 AND #2 A/C UNIT. 2. #1 AND #2 REEFER PLANT. 3. #1 AND #2 CHILL WATER PLANT. 4. #1 AND #2 SEISMIC AIR COMPRESSOR. 5. #1 AND #2 SHIP'S SERVICE AIR COMPRESSORS.	
1G512MP01	GF	**#6 SSDG** #6 SSDG HAD THE FOLLOWING DEFICIENCIES: 1. ALL ENGINE MOUNTED GAUGES ARE OUT OF CALIBRATION. 2. THE ENGINE MANOMETER FLUID LEVEL WAS LOW. 3. THE JACKET WATER EXPANSION TANK LAGGING AND FW/SW HEAT EXCHANGER LAGGING WAS SECURED BY LINE AND NOT BY METAL WIRE. 4. THERE WERE TWO CRANKCASE WARNING SIGNS ON THE ENGINE, ONE STATING A 10 MINUTE WAITING PERIOD AND THE OTHER A 30 MINUTE WAITING PERIOD PRIOR TO OPENING CRANKCASE. 46CFR STATES 15 MINUTES. 5. ENGINE AND GENERATOR MOUNTING RAILS HAD FOUNDATION BOLTS MISSING (TOTAL OF 4 HOLES).	
1G512MP02	GF	**#6 SSDG** #6 SSDG HAD THE FOLLOWING DEFICIENCIES: 7. THE TURBOCHARGER AIR FILTER POP-UP RESTRICTION INDICATORS WERE MISSING AND/OR OVERSPRAYED WITH PAINT MAKING THEM DIFFICULT TO READ. 9. THE PORT TURBOCHARGER HAD METAL TO METAL CONTACT BETWEEN THE TURBOCHARGER IMPELLER BLADING AND HOUSING. 10. THE STBD TURBOCHARGER HAD METAL TO METAL CONTACT BETWEEN THE TURBOCHARGER IMPELLER BLADING AND HOUSING.	
1K513MP02	GF	**TECHNICAL MANUALS** THE FOLLOWING DEFICIENCIES EXIST WITH THE TECHNICAL DOCUMENTATION FOR INSTALLED EQUIP: 2. THERE WAS NO TECH MANUAL FOR THE WOODWARD EGB TYPE GOVERNORS INSTALLED ON THE SSDGs. 3. SHIP'S FORCE HAD AN OUTDATED PARTS SUPPORT LIST FOR ALL SERIES OF CATERPILLAR ENGINES.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1G514MP01	GF	**#5 SSDG** #5 SSDG HAD THE FOLLOWING DEFICIENCIES: 1. ALL ENGINE MOUNTED GAUGES ARE OUT OF CALIBRATION. 2. THE ENGINE MANOMETER FLUID LEVEL WAS LOW. 3. THE JACKET WATER EXPANSION TANK LAGGING AND FW/SW HEAT EXCHANGER LAGGING WAS SECURED BY LINE AND NOT BY METAL WIRE. 4. THERE WERE TWO CRANKCASE WARNING SIGNS ON THE ENGINE, ONE STATING A 10 MINUTE WAITING PERIOD AND THE OTHER A 30 MINUTE WAITING PERIOD PRIOR TO OPENING CRANKCASE. 46CFR STATES 15 MINUTES. 5. ENGINE AND GENERATOR MOUNTING RAILS HAD FOUNDATION BOLTS MISSING (TOTAL OF 4 HOLES).	
1G514MP02	GF	**#5 SSDG** #5 SSDG HAD THE FOLLOWING DEFICIENCIES: 7. THE TURBOCHARGER AIR FILTER POP-UP RESTRICTION INDICATORS WERE MISSING AND/OR OVERSPRAYED WITH PAINT MAKING THEM DIFFICULT TO READ. 9. THE STBD TURBOCHARGER WAS OIL FOULED AND HAD METAL TO METAL CONTACT BETWEEN THE TURBOCHARGER IMPELLER BLADING AND HOUSING. 10. THE PORT TURBOCHARGER WAS SHOWING THE BEGINNING SIGNS OF METAL TO METAL CONTACT BETWEEN THE TURBOCHARGER IMPELLER BLADING AND HOUSING. 11. EXCESSIVE FUEL FROM THE AIR START MOTOR HAD THE PORT SIDE OF THE ENGINE FOULED WITH DIRT AND FUEL. 12. SSDG ENGINE BLOCK NAME PLATE WAS PAINTED OVER.	
1G515MP01	GF	**#4 SSDG** #4 SSDG HAD THE FOLLOWING DEFICIENCIES: 1. ALL ENGINE MOUNTED GAUGES ARE OUT OF CALIBRATION. 2. THE ENGINE MANOMETER FLUID LEVEL WAS LOW. 3. THE JACKET WATER EXPANSION TANK LAGGING AND FW/SW HEAT EXCHANGER LAGGING WAS SECURED BY LINE AND NOT BY METAL WIRE. 4. THERE WERE TWO CRANKCASE WARNING SIGNS ON THE ENGINE, ONE STATING A 10 MINUTE WAITING PERIOD AND THE OTHER A 30 MINUTE WAITING PERIOD PRIOR TO OPENING CRANKCASE. 46CFR STATES 15 MINUTES. 5. ENGINE AND GENERATOR MOUNTING RAILS HAD FOUNDATION BOLTS MISSING (TOTAL OF 4 HOLES).	
1G515MP02	GF	**#4 SSDG** #4 SSDG HAD THE FOLLOWING DEFICIENCIES: 7. THE TURBOCHARGER AIR FILTER POP-UP RESTRICTION INDICATORS WERE MISSING AND/OR OVERSPRAYED WITH PAINT MAKING THEM DIFFICULT TO READ. 8. THE GOVERNOR OIL HAD TO BE CONTINUALLY TOPPED OFF DUE TO SUSPECTED INTERNAL OIL LEAK. 10. THE RIGHT BANK TURBOCHARGER HAD METAL TO METAL WEAR BETWEEN THE IMPELLER BLADES AND THE TURBOCHARGER HOUSING.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1G516MP01	GF	**#3 SSDG** #3 SSDG HAD THE FOLLOWING DEFICIENCIES: 1. ALL ENGINE MOUNTED GAUGES ARE OUT OF CALIBRATION. 2. THE ENGINE MANOMETER FLUID LEVEL WAS LOW. 3. THE JACKET WATER EXPANSION TANK LAGGING AND FW/SW HEAT EXCHANGER LAGGING WAS SECURED BY LINE AND NOT BY METAL WIRE. 4. THERE WERE TWO CRANKCASE WARNING SIGNS ON THE ENGINE, ONE STATING A 10 MINUTE WAITING PERIOD AND THE OTHER A 30 MINUTE WAITING PERIOD PRIOR TO OPENING CRANKCASE. 46CFR STATES 15 MINUTES. 5. ENGINE AND GENERATOR MOUNTING RAILS HAD FOUNDATION BOLTS MISSING (TOTAL OF 4 HOLES).	
1G516MP02	GF	**#3 SSDG** #3 SSDG HAD THE FOLLOWING DEFICIENCIES: 7. THE TURBOCHARGER AIR FILTER POP-UP RESTRICTION INDICATOR WAS IN THE DANGER ZONE ON THE PORT INTAKE DURING FULL POWER OPERATIONS. 8. THE JACKET WATER PUMP HAD AN OIL SEAL LEAK. 9. GOVERNOR OIL NEEDED TO BE ADDED FREQUENTLY DURING GENERATOR OPERATIONS.	
1G517MP01	GF	**#2 SSDG** #2 SSDG HAD THE FOLLOWING DEFICIENCIES: 1. ALL ENGINE MOUNTED GAUGES ARE OUT OF CALIBRATION. 2. THE ENGINE MANOMETER FLUID LEVEL WAS LOW. 3. THE JACKET WATER EXPANSION TANK LAGGING AND FW/SW HEAT EXCHANGER LAGGING WAS SECURED BY LINE AND NOT BY METAL WIRE. 4. THERE WERE TWO CRANKCASE WARNING SIGNS ON THE ENGINE, ONE STATING A 10 MINUTE WAITING PERIOD AND THE OTHER A 30 MINUTE WAITING PERIOD PRIOR TO OPENING CRANKCASE. 46CFR STATES 15 MINUTES. 5. ENGINE AND GENERATOR MOUNTING RAILS HAD FOUNDATION BOLTS MISSING (TOTAL OF 4 HOLES).	
1G517MP02	GF	**#2 SSDG** #2 SSDG HAD THE FOLLOWING DEFICIENCIES: 7. THE TURBOCHARGER AIR FILTER POP-UP RESTRICTION INDICATORS WERE MISSING AND/OR OVERSPRAYED WITH PAINT MAKING THEM DIFFICULT TO READ. 9. THE PORT TURBOCHARGER HAD METAL TO METAL CONTACT BETWEEN THE IMPELLER BLADES AND HOUSING.	
1G518MP01	GF	**#1 SSDG** #1 SSDG HAD THE FOLLOWING DEFICIENCIES: 1. ALL ENGINE MOUNTED GAUGES ARE OUT OF CALIBRATION. 2. THE ENGINE MANOMETER FLUID LEVEL WAS LOW. 3. THE JACKET WATER EXPANSION TANK LAGGING AND FW/SW HEAT EXCHANGER LAGGING WAS SECURED BY LINE AND NOT BY METAL WIRE. 4. THERE WERE TWO CRANKCASE WARNING SIGNS ON THE ENGINE, ONE STATING A 10 MINUTE WAITING PERIOD AND THE OTHER A 30 MINUTE WAITING PERIOD PRIOR TO OPENING CRANKCASE. 46CFR STATES 15 MINUTES. 5. ENGINE AND GENERATOR MOUNTING RAILS HAD FOUNDATION BOLTS MISSING (TOTAL OF 4 HOLES).	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1G518MP02	GF	**#1 SSDG** #1 SSDG HAD THE FOLLOWING DEFICIENCIES: 7. THE TURBOCHARGER AIR FILTER POP-UP RESTRICTION INDICATORS WERE MISSING AND/OR OVERSPRAYED WITH PAINT MAKING THEM DIFFICULT TO READ. 8. THE PORT TURBOCHARGER WAS OIL FOULED AND HAD METAL TO METAL CONTACT BETWEEN THE IMPELLER BLADES AND HOUSING. 9. THE STBD AND PORT TURBOCHARGER PRE-FILER WAS OIL SOAKED. 10. THE CRANKCASE BREATHER ELEMENTS WERE OIL SOILED. 11. THE WIRING FOR #4 CYLINDER PYROMETER IS DEFECTIVE. AT FULL POWER OPERATIONS THE CYLINDER TEMPERATURE READ 300 DEGREES LOWERE THAN THE REST OF THE CYLINDERS IN THE BANK. THE WIRE LEADS WERE CHANGED WITH #2 CYLINDER PYROMETER AND THAT CYLINDER READ 300 DEGREES LOWER #4 CYLINDER WAS THEN READING CORRECTLY.	
1G519MP01	GF	**JACKET WATER TREATMENT** THE JACKET WATER TREATMENT PROGRAM HAS THE FOLLOWING DEFICIENCIES: 1. THE SSDG JACKET WATER TREATMENT PROGRAM WAS NOT BEING SAMPLED AS RECOMMENDED BY THE MANUFACTURERS TECHNICAL MANUAL. 2. THE SAMPLES TAKEN ON ALL SIX SSDGs REVEALED A BROWN BRACKISH WATER. 3. JACKET WATER RESERVOIRS HAD MILD SCALING OF THE TANK WALLS. RECOMMEND THE FOLLOWING: A. CLEAN AND FLUSH THE GENERATORS WITH THE OEMs CLEANER AND ADD NEW TREATMENT. B. EXPAND THE TREATMENT PROGRAM TO TEST FOR CHLORIDE AND PH.	
1G521MP01	GF	**#4 SSDG AXIAL MOVEMENT** THE GENERATOR ROTOR ON THE DIESEL GENERATOR SET WAS VIBRATING IN THE AXIAL DIRECTION OF A MAGNITUDE FROM 1/8" TO ¼". THIS WILL ACT ON THE ENGINE CRANKSHAFT AND CRANKSHAFT THRUST BEARING. MAXIMUM ALLOWED THRUST ON THE CRANKSHAFT IS 0.024". COMPARED TO OTHER ONLINE GENERATORS, THIS GENERATOR HAD SIGNIFICANTLY MORE MOVEMENT THAN THE OTHER GENERATORS INSPECTED.	
1G523MP01	GF	**AIR MANIFOLD TEMPERATURE GAUGE** THERE ARE NO AIR MANIFOLD TEMPERATURE GAUGES INSTALLED ON ANY OF THE MAIN PROPULSION SSDG GAUGE PANELS. THE GAUGE BOARD HAS AN LISTED ON THE DATA NAMEPLATE ON THE SIDE OF THE GAUGE BOARD.	
1G526MP01	GF	**STBD MOTOR SCR** WHILE CONDUCTING THE FULL POWER TRIAL IT WAS NOTED THAT AT THE UPPER POWER RANGE OF THE STBD PROPULSION MOTOR THERE WAS A 300 AMP DIFFERENCE BETWEEN THE STBD MASTER SCR AND STBD SLAVE SCR. THE MASTER SCR (WHICH HAS CONTROL AND SENSING CIRCUITS) WAS 300 AMPS BELOW THE SLAVE SCR. THE STBD MASTER SCR CABINET WAS MAKING A HIGH PITCH CHATTERING NOISE THROUGHOUT THE TIME THE STBD ENGINE WAS AT HIGH POWER.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1A528MP01	GF	**FUEL OIL FILTER HOUSING** THE SSDG FUEL OIL FILTERS DO NOT HAVE ENCLOSED SAFETY BOXES SURROUNDING THE RACOR FILTER HOUSINGS. THE FILTERS CANNOT BE SAFELY CHANGED ON #3 SSDG DUE TO THE GENERATOR FAN TURBULENCE BETWEEN #2 AND #3 SSDGs WITHOUT BLOWING THE FUEL AIRBORNE THROUGHOUT THE SPACE. RECOMMEND INSTALLATION OF AN ENCLOSURE OVER THE FUEL FILTERS TO PREVENT SPRAYING OF FUEL IN THE GENERATOR ROOM IF THE INTEGRITY OF THE FILTER HOUSING IS BREACHED.	
2G531MP01S	GF	**SSDG GOVERNOR LUBE OIL** ALL SIX SSDG GOVERNOR OIL DRAINS HAD A PETCOCK INSTEAD OF A PLUG IN THE CASING DRAIN. THE PETCOCK CAN EASILY VIBRATE LOOSE CAUSING THE OIL TO DRAIN FROM THE ENGINE RESULTING IN ENGINE FAILURE.	
2G533MP01S	GF	**ELECTRICAL SAFETY** ELECTRICAL CABLES TO WASTE OIL TANK CL JB FF CKTs 8A10 AND 8A11 WERE CHAFFED BY THE OPENING AND CLOSING OF THE DECK GRATING LOCATED ON THE STANCHION IN FRONT OF THE FO PURIFIER. THE DEFICIENCY WAS CLOSED AS BEING COMPLETE BY MODIFYING THE DECK GRATING ; HOWEVER THE PROBLEM STILL EXISTED.	
2G534MP01S	GF	**#5 GENERATOR CABLE** #5 GENERATOR JACKET WATER HEATER CABLE WAS CHAFFED AT TWO PLACES IN THE CABLE RUN, AT THE STUFFING TUBE AND THE VERTICAL CABLE RUN ON THE GENERATOR. THIS WAS CAUSED BY TWO HINGED DECK PLATES. THIS DEFICIENCY WAS WRITTEN DURING ACCEPTANCE TRIALS AND CLOSED BY THE KTR AS BEING CORRECTED.	
2A535MP01S	GF	**SHIP'S SERVICE TRANSFORMERS** SHIP'S SERVICE TRANSFORMERS LOCATED IN THE LOWER LEVEL OF THE GENERATOR ROOM WERE MOUNTED ON THE DECK PLATE LEVEL DIRECTLY ABOVE THE BILGE. THERE WERE NO PROTECTIVE COVERS INSTALLED ON THE BOTTOMS OF THE TRANSFORMERS THEREBY EXPOSING THEM TO HIGH BILGE LEVELS AND SPRAY FROM THE BILGE SPRINKLERS. RECOMMEND INSTALLING PROTECTIVE COVERS TO THE BOTTOM OF THE TRANSFORMERS.	
2G536MP01	GF	**VALVE LABELING** THE FOLLOWING VALVE LABELING DISCREPANCIES WERE NOTED: A. LABELING WAS MISSING, ILLEGIBLE OR INCORRECT ON APPROXIMATELY FIFTY PERCENT OF THE VALVES IN THE MAIN ENGINEERING SPACES. B. VALVE HANDWHEELS WERE NOT PROPERLY COLOR CODED. C. VALVES LOCATED BELOW THE DECK ACCESS PLATES DID NOT HAVE IDENTIFICATION LABEL PLATES OR HAD THEM BUT WERE ILLEGIBLE.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
2G537MP01	GF	**REPAIR SHOP** THE REPAIR SHOP HAD THE FOLLOWING DISCREPANCIES: 1. LARGE AMOUNTS OF EXCESS MATERIALS WERE STORED IN THE SPACE AND NOT SECURED FOR SEA. 3. THERE WAS NO WELDING CURTAIN INSTALLED FOR THE WELDING AREA. 5. HAZMAT WAS STORED IN THE SPACE.	#1 AND #5 CORRECTED #3 OPEN
2G538MP01	GF	**SCIENCE HOLD AFT** THE AFT SCIENCE HOLD HAD THE FOLLOWING DISCREPANCIES: 1. LARGE AMOUNTS OF MATERIALS NOT SECURED FOR SEA. EXAMPLES: BUCKETS, BOXES, SHEETS OF PLYWOOD, WOOD, TRASH, DOLLY, SHEETS OF PLEXIGLAS ETC. 2. THERE WERE TWO SHELVES OF MIXED HAZMAT TO INCLUDE SOLVENTS, FLAMMABLES, GREASES CONCENTRATES, ACETONE AND INSECT KILLER STORED IN THE SPACE. 3. DECK SHOWED MINOR RUSTING UNDERNEATH THE DECK GRATINGS. 4. DIRT AND DEBRIS UNDERNEATH THE DECK GRATINGS. 5. THERE WAS A LARGE METAL STORAGE RACK ON THE STBD SIDE THAT WAS NOT SECURED TO THE DECK OR BULKHEAD.	#1 CORRECTED #2-#5 OUTSTANDING
2G539MP01	GF	**AIR RECEIVER FLASKS** TWO AIR RECEIVER FLASKS (LOCATED IN THE GENERATOR ROOM UPPER LEVEL) HAD AUTOMATIC BALL DRAIN VALVES WHICH DID NOT OPERATE. THESE VALVES HAD TO BE MANUALLY DRAINED BY SHIP'S FORCE WATCHSTANDERS ONCE A WATCH.	
2G540MP01	GF	**SPACE ACCESS COVER** THE DIESEL STACK ACCESS PLATE LOCATED ON THE 0-4 LEVEL HAD NO PLACARD IDENTIFYING THE SPACE, AND NO WARNING PLACARD FOR VENTILATION AND GAS FREE CERTIFICATION REQUIREMENT.	
3G542MP01	GF	**DATA AHEAD FULL POWER** AHEAD FULL POWER DEMONSTRATION WAS SATISFACTORY. REQUIRED ATTAINED PORT STBD MOTOR RPM: 855-945 917 897 MOTOR VOLTAGE: 713-787 760 716 MOTOR CURRENT: MAX 3160 3020 2954 HORSEPOWER: 2850-3150 3050 2805 NOTE: THE ABOVE DATA WAS AVERAGED OVER A TWENTY MINUTE PERIOD OF TIME.	HISTORICAL - NO ACTION REQUIRED
3G543MP01	GF	**DATA QUICK REVERSAL** 1. QUICK REVERSAL IN THE ASTERN DIRECTION WAS SATISFACTORY. 2. QUICK REVERSAL IN THE AHEAD DIRECTION WAS SATISFACTORY.	HISTORICAL – NO ACTION REQUIRED
2G502NV01	GF	**SIGNAL LIGHTS** BOTH SIGNAL SEARCH LIGHTS ON THE SIGNAL BRIDGE HAD BROKEN GROUND STRAPS.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
1G500OH06S	GF	**MACHINE GUARDING, LATHE** POINT-OF-OPERATION GUARD (MOVABLE SAFETY SHIELD, CHUCK GUARD AND "CROSSLIDE TRAVEL" STEEL FRAME LATHE SHIELD) WAS NOT INSTALLED ON THE LATHE IN THE ALVIN MACHINE SHOP 1-85-4.	
1G500OH07S	GF	**MACHINE GUARDING, DRILL PRESS** POINT-OF-OPERATION GUARD (MOVABLE TELESCOPING DRILL SHIELD OR SAFETY CHIP SHIELD) WAS NOT INSTALLED ON THE DRILL PRESS IN THE ALVIN MACHINE SHOP 1-85-4.	
1G500OH12US	GF	**CO2 FIXED FIRE FIGHTING SYSTEM** THE TWO MANUAL VENT APPERATURES THAT MAKE THE ENGINE ROOM CONTIGUOUS WITH THE SWITCHBOARD ROOM WILL CAUSE THE RELEASED CO2 TO FILL BOTH THE SWITCHBOARD SPACE AND MCR AREA WHEN THE GAS IS RELEASED FROM THE MCR. THIS POSES AN UNACCEPTABLE HAZARD FOR THE INDIVIDUAL RELEASING THE CO2 FROM THE MAIN CONTROL ROOM. ELIMINATE THE RELEASE MECHANISM FROM THE MCR OR REDESIGN THE VENT SYSTEM TO AUTOMATICALLY RELEASE AND CLOSE DAMPERS IN THE APPARATURES WHEN CO2 IS RELEASED TO THE ENGINE ROOM.	
2G502OH01S	GF	**COMPRESSED GAS CYLINDER STOWAGE** COMPRESSED GAS CYLINDERS WERE IMPROPERLY STOWED ON THE WEATHER DECK, PORT SIDE, AT FRAME 95. GAS CYLINDERS WERE TIED WITH LINE VICE CHAINS, THEY WERE LOOSE IN THEIR RACKS, AND THE OXYGEN AND ACETYLENE CYLINDERS WERE NOT SEGREGATED.	
2G503OH01S	GF	**FLAMMABLE NO SMOKING SIGNS** THE PAINT LOCKER LACKED NO SMOKING SIGNS OUTSIDE AND INSIDE THE SPACE.	
2G505OH01S	GF	**SIGHT CONSERVATION – AREAS NOT MARKED** AN EYE HAZARD WARNING SIGN WAS NOT POSTED IN THE BOSN'S WORKSHOP.	
2G506OH01	GF	**RESP PROT – PROGRAM ESTABLISHED** A RESPIRATORY PROTECTION PROGRAM, AS REQUIRED BY OSHA, WAS NOT ESTABLISHED FOR EMPLOYEES REQUIRED TO WEAR RESPIRATORS. SURGICAL MASKS WERE INCORRECTLY USED THROUGHOUT THE SHIP AS RESPIRATORY PROTECTION. THE OSHA PROGRAM MUST INCLUDE THE LISTED ELEMENTS: - PROPER, HAZARD SPECIFIC SELECTION - TRAINING - CLEANING AND DISINFECTION - STORAGE - INSPECTION AND REPAIR - IH SURVEYS - EVALUATION OF PROGRAM – MEDICAL SCREENING - NIOSH/MSHA APPROVED RESPIRATORS - FIT-TESTING	
2G507OH01	GF	**INVENTORY NOT COMPLETE** AN INVENTORY OF ALL SHIP MAINTENANCE AND SCIENTIFIC USE HAZMAT WAS NOT CONDUCTED, AND MATERIAL SAFETY DATA SHEETS (MSDS) WERE NOT AVAILABLE FOR ALL HAZMAT ONBOARD.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
2G508OH01	GF	**EMPLOYEE TRAINING** EMPLOYEES WERE NOT PROVIDED THE REQUIRED OSHA TRAINING ON HAZMAT HANDLING AND PRECAUTIONS, MATERIAL SAFETY DATA SHEETS, AND THEIR RIGHT TO KNOW SAFETY INFORMATION.	
2G509OH01	GF	**OSHA TRAINING** ALL EMPLOYEES DID NOT RECEIVE OSHA PROGRAM TRAINING UPON REPORTING ABOARD AND ANNUALLY THEREAFTER.	
2G501OP01	GF	**10CM RADAR** THE 10CM RADAR ANTENNA PEDESTAL BASE REQUIRED PAINTING AND PRESERVATION.	
1G500SP06	GF	**WASHER INSTALLATION** WASHERS WERE INSTALLED IN A MANNER THAT WILL PERMIT THE ACCUMULATION OF DIRT, LINT AND WATER WITHOUT A MEANS TO ADEQUATELY ACCESS FOR CLEANING.	
1K500SP07	GF	**GREASE INTERCEPTOR HOOD, INSTALL** 1. ACCESS PANELS TO DETAILING DOORS ON OVEN HOOD ARE NOT HINGED, QUICK ACTING PANELS. ACCESS WILL BE REQUIRED DAILY TO ENSURE HOOD IS ADEQUATELY CLEANED. 2. THE GREASE INTERCEPTOR HOOD REMOTE FIRE CONTROL TOGGLE SWITCH LABEL WAS MISLEADING, INDICATING DEEP FAT FRYER SHUTDOWN VICE HOOD SHUTDOWN.	
1K500SP08	GF	**GREASE INTERCEPTOR HOOD, WASHDOWN** THE OVEN GREASE INTERCEPTOR HOOD SEMI-AUTOMATIC WASHDOWN SYSTEM PULLED WATER INTO THE VENT DUCTING WHICH THEN LEAKED ONTO OVERHEAD SHEATHING AND DECK. SUSPECT POORLY POSITIONED NOZZLE.	
2G501SP01S	GF	**GREASE INTERCEPTOR HOOD, WASHDOWN** AT CARD # 2K016SP 01 REFERS SAFETY CODE: 2C THE GREASE INTERCEPTOR HOOD SEMI-AUTOMATIC WASHDOWN SYSTEM LEAKED FROM THE OVERHEAD DURING OPERATION. LEAKS WERE NOTED AT THE FOLLOWING LOCATIONS: - TO THE RIGHT OF THE WASHDOWN CABINET - FROM LIGHT FIXTURE IN SCULLERY - FROM FURRING STRIP ABOVE DEEP FAT FRYER HOOD - FROM ACCESS PLATE AND LIGHT FIXTURE TO THE LEFT OF HOOD OVER STEAM PRESSURE COOKER.	
2G503SP01S	GF	**GREASE INTERCEPTOR HOOD, INSTALL** SHIP'S FORCE REPORTED THAT THE DRAINLINES INSTALLED ON ATHWARTSHIPS GREASE INTERCEPTOR HOODS WERE INADEQUATE. WATER OVERFLOWED THE DRAIN TROUGH ON TO ELECTRICAL EQUIPMENT DURING WASHDOWN IF THE SHIP ROLLED TO PORT OR STARBOARD.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
2G505SP01	GF	**AIR GAP, GRAVITY DRAIN** DRAINS FROM THE FOLLOWING TYPES OF EQUIPMENT DID NOT DISCHARGE THROUGH AN AIR GAP. ITEMS: SPACES: ALL REACH-IN REEFERS FOOD SERVICE SPACES HOT FOOD TABLE GALLEY (THE AIR GAP SHALL BE AT LEAST TWICE THE DIAMETER OF THE DRAIN SERVED, BUT NOT LESS THAN 2 INCHES. WHEN A RECEIVING FUNNEL OR COAMING IS INSTALLED, THE GAP SHALL BE MEASURED FROM THE TOP OF THE FUNNEL OR COAMING TO THE OPEN END OF THE PIPE).	
2G506SP01	GF	**CALIBRATION, GAUGE/THERMOMETER** 1. CONTROL THERMOSTATS FOR THE FOLLOWING FOOD SERVICE EQUIPMENT WERE OUT OF CALIBRATION: EQUIPMENT/LOCATION: TOASTMASTER OVEN/GALLEY DEEP FAT FRYER/GALLEY 2. GAUGES OR THERMOMETERS FOR THE FOLLOWING FOOD SERVICE EQUIPMENT WERE OUT OF CALIBRATION:EQUIPMENT/LOCATION: SANITIZING SINK/SCULLERY CHILL BOX (SIDE/SIDE)/ GALLEY FREEZER (SIDE/SIDE)/GALLEY CHILL BOX (TOP & BOTTOM)/MESS DECK	
2G510SP01	GF	**GREASE INTERCEPTOR HOOD, INSTALL** AT CARD #2K013SP 01 REFERS ACCESS PANELS TO DETAILING DOORS ON THE GREASE INTERCEPTOR HOOD OVER THE CONVECTION OVEN/STEAM COOKER ARE NOT HINGED, QUICK ACTING PANELS. ACCESS IS REQUIRED DAILY TO ENSURE HOOD IS ADEQUATELY CLEANED. REPLACEMENT OF RIVETS WITH SCREWS WAS NOT A SATISFACTORY SOLUTION; EACH PANEL IS HELD IN PLACE WITH 16 SCREWS. IT IS UNREASONABLE TO EXPECT SHIP'S FORCE TO REMOVE AND REPLACE THESE PANELS DAILY.	
2G511SP01	GF	**PROOFER** THE DOUGH PROOFER SHEET PAN GUIDES DID NOT HOLD PANS SECURELY;UNIT WAS TOO WIDE.	
2G512SP01	GF	**REEFER, TEMPS** REFRIGERATION TEMPERATURES FOR THE FOLLOWING SPACES WERE NOT MAINTAINED: REQD TEMPS: ACTUAL: REACH-IN REEFER (TOP) 34F-40F 32F (BOTTOM) 31F	
2G513SP01	GF	**REEFER, DOORS** LISTED REFRIGERATED STORAGE DOORS HAD THE FOLLOWING INADEQUACIES: EQUIPMENT (LOCATION) CHILL BOX (SIDE/SIDE) GALLEY - POOR SEAL, BOTTOM CHILL BOX (TOP) MESS DECK POOR SEAL, BOTTOM CORNER FREEZER PROV DECK POOR SEAL, SIGNIFICANT ICE BUILD-UP AT THRESHOLD AND ON RACKING.	

Open Final Contract Trial Cards

TRIAL CARD	SCREENING	DESCRIPTION	COMMENTS
2G514SP01	GF	**REEFER** 1. THE ROUTINE CLEANING OF AIR-COOLED CONDENSERS, CONDENSER FILTERS AND FANS ON THE GALLEY SIDE/SIDE FREEZER/CHILL BOX HAD NOT BEEN PERFORMED. 2. REFRIGERATOR COMPARTMENT INTERIOR LIGHTING WAS INOPERATIVE: SIDE/SIDE CHILL BOX GALLEY CHILL BOX (1 OF 2 LIGHTS) PANTRY 3. THE GALLEY SIDE/SIDE CHILL BOX LIGHT COVER WAS MELTED.	
2G517SP01	GF	**JACKROD** HOLDING BRACKETS PROVIDED FOR THE STOWAGE OF THE JACKROD WHEN NOT IN USE WERE OF INADEQUATE STRENGTH, DURABILITY.	
1K500MP14SR	KA	**MAIN ENGINE FUEL OIL HEAT EXCHANGER** FOUND THAT ALL 6 SSDG FUEL OIL SALT WATER HEAT EXCHANGERS HAVE FERROUS METAL END CAPS AND TUBE SHEETS. ALSO INLET AND OUTLET PIPE FITTING TO EACH HEAT EXCHANGER CONSISTS OF A FERROUS METAL REDUCER(INSTALLED IN EXCHANGERS END CAP) AND A BRASS HOSE TO PIPE FITTING(INSTALLED INTO THIS REDUCER). THE POTENTIAL OF A CASREP 3 IS A REAL PROBABILITY. PROVIDE SERVICES TO CORRECT THIS CONDITION. ONCE CONDITION HAS BEEN CORRECTED DEMONSTRATE ITS' PROPER OPERATION TO THE SHIP'S FORCE.	
1K500OH04S	KA	**HALOCARBON EXHAUST VENTILATION** EXHAUST TERMINALS WERE NOT LOCATED 9" ABOVE DECK IN THE IMMEDIATE VICINITY OF THE A/C AND REEFER MACHINERY.	AT CARD
1K500OH05S	KA	**A/C MACHINERY EXHAUST VENTILATION** THE AIR CONDITIONING MACHINERY LOCATED IN THE WINCH ROOM, 2-99-0 DID NOT HAVE AN EXHAUST SYSTEM TERMINAL LOCATED APPROXIMATELY NINE INCHES ABOVE THE DECK IN THE IMMEDIATE VICINITY OF THE MACHINERY.	AT CARD

Open Warranty Items

TRIAL CARD	SCREEN	DESCRIPTION	COMMENTS
1W074DK01SU	KA	**TORSION WINCH (MARKEY)** THE STARBOARD WINCH/WIRE DRUM IS LEAKING OIL FROM ITS' OUTBOARD DRUM SUPPORT SEAL. PROVIDE SERVICES TO STAUNCH LEAK AT SEAL.	REQUIRE OPS TEST
1W095EL01SU	KA	**MAIN SWITCHBOARD** EXCESSIVE HUNTING WAS IN EVIDENCE WHEN DRIVE SCR WAS SHIFTED. REQUIRES OPS TEST FROM FULL ASTERN TO FULLAHEAD WHEN SSDG'S #1 AND #2 WHERE PROVIDING POWER AT THE PROPULSION BUS. THIS HUNTING OCCURED WHEN THE CONTROL LIMIT (IN THE PLC-6 GE LADDER LOGIC SYSTEM) CAME INTO AND OUT OF OPERATION AT 95% AVAILABLE KW. AT THE SAME TIME THE KVA LOAD ON THE BUS HAD TO BE MANUALLY ATTENUATED (TO PREVENT UNBALANCED REACTIVE LOADS FROM TRIPPING ONE OF THE GENERATORS PRIOR TO THE 95% LOAD LIMIT BEING ATTAINED). THIS IS HIGHLY INDICATIVE OF MALFUCTIONING OR INADEQUATE COMPENSATING CIRCUIT DESIGN OR IMPROPERLY OPERATING VOLTAGE REGULATORS. THIS CONDITION VIOLATES THE DESIGN CONCEPT OF ACCU AS INTERVENTION WAS AND IS REQUIRED WITH THIS GENERATOR CONFIGURATION IN ORDER TO OPERATE THE PLANT WITHIN NORMAL PERAMETERS. PROVIDE SERVICES TO ALLOW THE SYSTEM TO OPERATE WITHIN ITS' ACCU CRITERIA WHILE ELIMINATING THE MALADIES DESCRIBED ABOVE.	REQUIRE OPS TEST
1W135NV01	KA	**ECHO SOUNDER (IMO)** THE ECHO SOUNDER FAILS TO TRACK BOTTOM ON ALL SETTINGS. PROVIDE SERVICE TO RECTIFY THE ABOVE DISCREPANCY WHICH CONNOTES A C2 CASREP AT THIS TIME.	EQUIPMENT IS NOT READING CORRECTLY. NEED TECH REP.
1W173NV01	KA	**DOPPLER SPEED LOG (ODEC)** THE DOPPLER SPEED LOG IS NOT OPERATING IN A FUNCTIONAL MANNER. IT PROVIDES ERRATIC SPEED INFORMATION. THE SPEED SIGNAL RAPIDLY FLUCTUATES FROM 35 KTS. TO 2.0 KTS. AT RANDOM INTERVALS. IMPROPER SPEED SIGNALS ARE TRANSMITTED TO THE DP NAV SYSTEM AND ARPA RESULTING IN THESE SYSTEMS NOT PROVIDING PROPER PERFORMANCE. PROVIDE SERVICE TO MAKE THE DOPPLER SPEED LOG PERFORM IN A FUNCTIONAL MANNER.	
1W192OP02	KA	**SEABEAM** THE FOLLOWING IS A PROBLEM THAT WE HAVE EXPERIENCED WHILE OBTAINING STARBOARD SIDE DATA WITH UNIT. "TWO SERIOUS PROBLEMS EXIST WITH DATA ON THE STARBOARD SIDE. THE FIRST IS THAT, IN GENERAL WE SEE A NARROWER SWATH ON THE STARBOARD SIDE THAN ON THE PORT SIDE. THE DIFFERENCE IS @ LEAST 15 DEGREES THAT VARIES UP TO 50 DEGREES IN SOME TERRAIN. THE SECOND PROBLEM WITH THIS UNIT IS THE STARBOARD MOST NON-ZERO RETURNS ARE ALWAYS POOR. SIMILAR PROBLEM ENCOUNTERED ON REVELLE." PROVIDE SERVICES TO CORRECT THIS ISSUE.	

Open Warranty Items

TRIAL CARD	SCREEN	DESCRIPTION	COMMENTS
1W192OP03	KA	**SEABEAM** THE FOLLOWING IS A PROBLEM THAT WE HAVE EXPERIENCED WHILE OBTAINING DATA WITH THE DATA LOGGING TO TAPE UNIT. "THE SYSTEM IS NOT RELIABLE. HERE ARE THREE OF THE SERIOUS PROBLEM AREAS. 1. DATA THAT IS WRITTEN TO THE TAPE DOES NOT ALWAYS MATCH DATA ACTUALLY GENERATED. 2. ON OCCASION, DATA FILES ARE SKIPPED OVER WHEN WRITING SEQUENTIALLY TO TAPE (I.E: WRITE FILE-1, WRITE FILE-2, WRITE FILE-3, ETC). 3. ON OTHER OCCASIONS, THE TAPE LOGGING SIMPLY STOPS. ANY OF THESE THREE PROBLEMS ARE CRITICAL, SINCE WITHOUT THIS TAPE LOGGING FUNCTIONING, WE CAN NOT COLLECT DATA IN THE MANNER WE HAVE IMPLEMENTED." PROVIDE SERVICES TO CORRECT THIS ISSUE.	
1W192OP04	KA	**SEABEAM** HAVE EXPERIENCED THE FOLLOWING PROBLEM WITH THIS UNIT IN SHALLOW WATER. "THE PERFORMANCE OF THE SYTEM IN SHALLOW WATER DOES NOT MEET SPECIFIC TOLERANCES FOR BATHYMETRIC ACCURACIES. DURING A TEST IN 100M OF WATER, OVER 75% OF THE RETURNS HAD "RMS" ERRORS IN EXCESS OF 0.5% OF WATER DEPTH, AND OVER 20% OF THE RETURNS HAD "RMS"ERRORS IN EXCESS ABOVE 1 METER. ALSO THE OVERALL ACCUARACY IN SHALLOW WATER IS IN QUESTION FOR THE FOLLOWING REASONS. 1) FROM 100M TO 400M, WE WERE ONLY GETTING 120 DEGREES OF COVERAGE OF THE SWATH. 2) ONCE PAST 400M, COVERAGE INCERASED TO 150 DEGREES UNTIL ABOUT 800-1000M IN DEPTH. AT THIS POINT THE SWATH COVERAGE ANGLE WENT BACK TO 120 DEGREES." PROVIDE SERVICES TO CORRECT THIS ISSUE.	
1W192OP05	KA	**SEABEAM** EXPERIENCED THE FOLLOWING WITH NEAR NADIR DATA QUALITY. "UNDER MOST BOTTOM CONDITIONS, AND IN NEARLY ALL DEPTHS, THE QUALITY OF THE DATA IN THE NADIR REGION (=10 DEGREE) APPEARS TO BE QUITE NOISY. IN MANY SITUATIONS, WHEN IDENTIFIABLE (SUCH AS DURING FLAT BOTTOM, ROLL-BIAS TESTS), THIS NOISE APPEARED TO BE UNDER THE 0.5% OF DEPTH REQUIREMENT, BUT STILL PRODUCED NOTABLE ARTIFACTS IN THE DATA SETS. IF NOT CORRECTED, THIS COULD SERIOUSLY IMPACT THE AMOUNT OF POST- PROCESSING THAT WILL NEED TO BE DONE." PROVIDE SERVICES TO CORRECT THIS ISSUE.	
1W192OP06	KA	**SEABEAM** EXPERIENCED THE FOLLOWING PROBLEM WITH THE "AUTO GATES." "IN THE AREA OF RUGGED RELIEF, THE SYSTEM DOES ONLY A MODERATE JOB OF TRACKING THE BOTTOM USING CURRENT "AUTO GATES" ALGORITHMS. DURING OUR TEST, WE SAW BOTH INSTANCES WHERE THE SYSTEM WOULD LOOSE THE BOTTOM COMPLETELY OR WOULD GENERATE OUTLANDISH "AUTO GATES." IN MANY OF THESE SITUATIONS, WE COULD ACQUIRE FAIR-TO-GOOD USING "MANUAL GATES." PROVIDE SERVICES TO CORRECT THIS ISSUE.	

Open Warranty Items

TRIAL CARD	SCREEN	DESCRIPTION	COMMENTS
1W192OP09	KA	**SEABEAM** EXPERIENCED THE FOLLOWING PROBLEM WITH THE "SIDE-SCAN PIXEL SIZE." "IN THE PRESENT CONFIGURATION, THE CONTROL OF THE SIDE SCAN PIXEL SIZE IS BURIED IN THE POP-UP WINDOW THAT CONTROLS THE EPC GRAPHIC RECORDER. THIS IS A VERY IMPORTANT PARAMETER, SINCE IT ULTIMATELY AFFECTS THE SIDE-SCAN SWATH COVERAGE. THE MEANING AND USAGE OF THIS PARAMETER IS DOCUMENTED, HOWEVER, IT IS POORLY IMPLEMENTED AMD ITS CONTROL NEEDS TO BE MOVED TO A MORE APPROPRIATE LOCATION." PROVIDE SERVICES TO CORRECT THIS ISSUE.	
1W192OP12	KA	**SEABEAM** EXPERIENCED THE FOLLOWING PROBLEM WITH THE "BATHYMETRY IN "UNCORRECTED METERS."" "AT PRESENT ALL BATHYMETRY DATA GENERATED BY THE SYSTEM IS CORRECTED FOR SOUND VELOCITY. HOWEVER, SOME USERS HAVE EXPRESSED INTEREST IN HAVING THE MORE TRADITIONAL, "UNCORRECTED DEPTH" VALUES GENERATED. WHILE IT SHOULD BE POSSIBLE TO DO SO IN A POST-PROCESSING ENVIRONMENT, IT WOULD BE MUCH SIMPLER IF THE SYSTEM DID THIS IN REAL TIME. FOR SOME OPERATIONS (WHEN USING OTHER ACOUSTIC METHODS), IT MAY BE VERY DIFFICULT TO RECONCILE THESE DIFFERENCES IN REAL TIME." PROVIDE SERVICES TO ADDRESS THIS ISSUE.	
1W192OP13	KA	**SEABEAM** EXPERIENCED "MYSTERY HANG UPS" WITH THIS SYSTEM. "DURING THE SEA TEST, WE DID EXPERIENCE MAYBE HALF A DOZEN INSTANCES WHERE THE SYSTEM SIMPLY STOPPED WORKING, FOR NO REAL, APPARENT REASON." PROVIDE SERVICES.	
1W193EL01R	KA	**#2 SSDG SWBD SWITCHGEAR (GE)** HAVE EXPERIENCED THE FOLLOWING PROBLEMS WITH # 2 SSDG. RPM METER WAS READING A SPEED, YET ENGINE WAS NOT RUNNING. B) CAN NOT ADJUST SPEED ADJUST POTENTIOMETER ABOVE 59.5 HZ. C) MADE NUMEROUS ATTEMPTS TO PARALLEL THIS GENERATOR WITH #4 GENERATOR (WHICH WAS ON PROP. BUS) FROM MCS CONSOLE, AND IT DID NOT WORK. NEXT ATTEMPTED TO PARALLEL IN SAME, BUT FROM SWITCHBOARD, AGAIN IT FAILED. AFTER A FEW MORE ATTEMPTS WERE MADE @ THE SWITCHBOARD, THE GENERATOR FINALLY WAS PARALLELED WITH #4. ALSO THE SAME WHEN ATTEMPTED @ THE MCS CONSOLE. NEXT DAY WE ENCOUNTERED THE SAME PROBLEM WHEN ATTEMPTING TO PLACE #2 SSDG ON THE BOARD WITH ANOTHER GENERATOR. PROVIDE SERVICE TO CORRECT THIS INTERMITTANT PROBLEM, AS WILL EFFECT SHIPS ACCU STATUS.	CORRECT PART (A)

Open Warranty Items

TRIAL CARD	SCREEN	DESCRIPTION	COMMENTS
1W199HB01M	KA	#2 AHU HVAC FOUND FAN MOTOR FOR THIS UNIT NOT PROPERLY INSTALLED. NEW PLATE INSTALLED INSTEAD OF HAVING THE CORRECT SIZE METAL SPACERS OR SHIMS INCORRECTLY UNDER THE MOTOR FOUNDATION, WHICH WOULD KEEP THE MOTOR PULLEY FROM STRIKING THE FAN SUPPORT, NUTS WERE INSTALLED IN ITS PLACE. WHICH IN TURN CAUSED THE FAN MOTOR FOUNDATION PLATE JACKING BOLTS THREADS TO BECOME DAMAGED. AT THE PRESENT TIME THE FAN BELTS WHICH DRIVE THIS AIR HANDLE CAN NOT BE TIGHTEN TO THEIR PROPER TIGHTEN. PROVIDE SERVICES AND MATERIAL TO CORRECT THIS SITUATION.	NEW PLATE INCORRECTLY INSTALLED
1W223HB01R	KA	MAIN LAB DECK DRAINS WHILE DRAINING THE AFT MOST SINK IN THE MAIN LAB, LARGE NORTH STAR PROPELLER QUANTITIES OF WATER AND DEBRIS (BLACK BEAUTY, CIGARETTE TO LOOK AT APR 98 BUTTS, ETC.) WERE COMING UP FROM THE LAB DECK DRAINS. PROVIDE SERVICES TO CORRECT THIS CONDITION.	TECH ISSUE
1W250EL01SR	KA	PROPULSION SWITCHBOARD (ALL SSDG'S) POTENTIAL TRANSFORMER USED TO PROVIDE GENERATOR VOLTAGE SIGNAL TO AUTO-SYNC AND SWBD INSTRUMENTS IS LOADED DOWN BY TOTAL LOAD ON TRANSFORMER WHEN ACTUAL BUS AND GENERATOR ARE MATCHED TRANSFORMER VOLTS DO NOT MATCH. GENERATOR APPEARS TO HAVE EXCESSIVE LOAD ON POTENTIAL TRANSFORMER. PROVIDE SERVICES TO CORRECT THIS CONDITION.	
1W278MP01	KA	LIPS OMNI-DIRECTIONAL THRUSTERS (DOC) NUMEROUS DIAGRAMS, PRINT NUMBERS AND PART REFERENCE LISTS DON'T COINCIDE PROPERLY WITH THE EQUIPMENT PROVIDED SHIP. AN EXAMPLE IS T/M ELECTRICAL DIAGRAM FOR ORDER NUMBER 7262/63 WHEN THE ORDER NUMBER OF THIS SHIP IS 7289/90. PROVIDE SERVICE TO INSURE THAT ALL LIPS DOCUMENTATION AND TECHNICAL MANUALS ARE PERTINENT TO THE LIPS EQUIPMENT PROVIDED AGOR-25.	LIPS TO PROVIDE DOCUMENTATION
1W283DK01	KA	HEAVY LIFT CRANES #1 AND #2 THE ELECTRICAL SCHEMATIC (B-P#ES-8102 SHT 1/1 REV #4) THAT WAS PROVIDED VESSEL BY ALASKA MARINE CRANE IN TECHNICAL MANUAL DOES NOT CONFORM TO INSTALLED CONFIGURATION. PROVIDE SERVICE TO REVISE MANUAL TO MATCH ACTUAL INSTALLATION.	NORTH AMERICAN CRANE TO PROVIDE DOCUMENTATION
1W302OP01	KA	HYDROBOOM PORT SIDE @ FR95 AS PER ECP-37 HYDROBOOM TO HANDLE FIBER OPTIC CABLE WITH BREAKING STRENGTH OF 46000 LBS.	BOOM FIXED BY WHOI. WAITING COST REIMBURSEMENT

Open Warranty Items

TRIAL CARD	SCREEN	DESCRIPTION	COMMENTS
1W303AX01	KA	**HVAC 50 TON CARRIER UNITS** DOCUMENTATION SUPPLIED VESSEL DOESN'T CORRESPOND WITH INSTALLED MACHINERY. SPECIFICALLY: 1-LISTED DISC.PRESSURE SETTING INCORRECT IN DOCUMENTATION 2-LISTED SUCT.PRESSURE SETTING INCORRECT IN DOCUMENTATION 3-NO SCALES ATTACHED TO LO CUT OUT SWITCHES. IMPOSSIBLE TO VERIFY CUT OUT SETTINGS LISTED IN DOCUMENTATION PROVIDE SERVICE TO RECTIFY THE ABOVE LISTED DISCREPANCIES.	DOCUMENTATION NEEDED
1W308HB01	KA	**HVAC SHIP'S OFFICE** SHIP'S OFFICE (1-21-4) IS UNCOMFORTABLE IN THE TROPICS DUE TO THE FACT THAT THERE IS VIRTUALLY NO AIRFLOW THROUGH THE VENT. PROVIDE SERVICE TO INCREASE AIR FLOW IN CFM TO COMPLY WITH HVAC DOCUMENTATION AND THEN REBALANCE ALL OTHER VENTS ON THIS HVAC SYSTEM TO SATISFACTION OF SHIP'S FORCE.	OPS TEST REQUIRED
1W317AX01U	KA	**HVAC AIR CONDITIONING PLANT FOR PMR** IMPOSSIBLE TO START THE 50 TON A/C UNIT FOR THE PMR IN ACCORDANCE WITH THE INSTRUCTIONS IN THE CARRIER TECHNICAL MANUAL. PUMP DOWN SWITCH MUST BE IN THE "ON" POSITION TO ENABLE AIR CONDITIONER TO COOL THE PMR. ALL INDICATIONS SHOW THAT THIS IS THE RESULT OF INCORRECT INSTALLATION/UNIT WIRING CONFIGURATION. PROVIDE SERVICE TO RECONFIGURE THE CARRIER 50 TON A/C UNIT CONTROL WIRING TO ENABLE THE SYSTEM TO BE OPERATED AS PER TECHNICAL MANUAL PROVIDED.	
1W318EL01	KA	**SWITCHBOARD MAIN (GE DOCUMENTATION)** THE REFERENCED DRAWING AND DOCUMENTS PROVIDED BY HALTER/GE HAVE THE FOLLOWING DISCREPANCIES AND ARE ERRONEOUS: 1-THE PARTS LIST DESCRIBES ASI (ITEM NO.13) AS BEING A 2410C SWITCH. THE DRAWING AND PARTS LIST SHOULD AGREE AS TO THE TYPE OF SWITCH. PERTAINING TO SHEET 15 ONLY, THE WIRE BETWEEN PFMI TERMINAL 6 AND PW81 TERMINAL IS IDENTIFIED ON BOTH ENDS AS IC32, BUT AS IC3 IN THE MIDDLE. THIS MIDDLE IDENTIFICATION SHOULD ALSO BE IC32. 2-ON SHEET17, LEAD DGO SHOWS IT SCHEMATICALLY CONTINUING TO SHEET59, HOWEVER IT SHOULD CONTINUE TO SHEET 72. ALSO, THE 24 V (-) LEAD SHOULD BE LABELLED"TO GENIUS BLOCK D402-4C [SHEET72] " 3-ON SHEET 35 IN THE MIDDLE OF THE PAGE THE WIRE IDENTIFIED AS8G83IS ALSO IDENTIFIED AS 8GB1-4 AT TERMINAL 5 OF SR-4.THE WIRE SHOULD HAVE THE SAME DESIGNATION. 4-ON SHEET 47,THE WIRE GOING TO VS5 AT TERMINAL 16 SHOULD BE LABELED '709-C'RATHER THAN '709-P'AS SHOWN IN THE DRAWING. 5-ON SHEET 47,THE WIRE GOING TO VS6 AT TERMINAL 16SHOULD BE LABELED"709C'AS OPPOSED TO"709-P'AS INDICATED IN THE DRAWING.	GE TO PROVIDE DOCUMENTATION

Open Warranty Items

TRIAL CARD	SCREEN	DESCRIPTION	COMMENTS
1W319EL01	KA	**SWITCHBOARD MAIN (GE DOCUMENTATION)** THE REFERENCED DRAWING AND DOCUMENTS PROVIDED BY HALTER/GE HAVE THE FOLLOWING DISCREPANCIES AND ARE ERRONEOUS: 1-ACCORDING TO SHEETS 2, 8,14,20,27 THE WIRE NUMBERS IN CIRCUITS C1 AND C3 APPEAR TO BE INCORRECT AFTER THE FIRST TERMINATION POINT. SHEET 21 OF DWG8204-MB-000 SHOWS THE CORRECT WIRING SEQUENCE NUMBERS. ON SHEET 34, THE WIRE NUMBERS AT CIRCUIT C3 ARE INCORRECT ALSO. 2-ON SHEETS 10&17,THE 2GASI RELAY COIL TERMINAL NUMBERS ARE INCORRECT FOR RELAY PART NUMBER 77. THE TERMINAL NUMBERS SHOULD BE 14&13 TO CORRESPOND WITH THE TERMINAL NUMBERS SHOWN ON OTHER SHEETS. 3-ON SHEET 20, THE DRAWING SHOWS PC NO.30 AS 750VA BUT THE PARTS LIST DESCRIBES PC NO.30 AS BEING 100VA.THE PARTS LIST AND DRAWING DESCRIPTION SHOULD AGREE. ALSO, THE VS4 WIRES LEAVING TERMINALS 16&24 TO VERISYNC RELAY GIVE AN INCORRECT SHEET REFERENCE.THIS PARTICULAR RELAY IS ON SHEET 22. IT WOULD ALSO BE BENEFICIAL IF THE WIRE DESTINATIONS WERE SHOWN AS ILLUSTRATED ON DWG0204-MB-000 [SHEET33 TAB42A]. LASTLY THE MODEL NO. SHOWN ON THE DRAWING IS DESCRIBED AS A 2410C.THE PARTS LIST DESCRIBES THE SWITCH AS BEING A 2408C.WHAT IS IT?	
1W320EL01	KA	**SWITCHBOARD MAIN (GE DOCUMENTATION)** THE LISTED DRAWING AND DOCUMENTS PROVIDED BY HALTER/GE HAVE THE FOLLOWING DISCREPANCIES AND ARE ERRONEOUS: 1-ON SHEET 23 THE RELAY DESIGNATION ON '4TGRS' GIVEN FOR ITEM NO.70 IS INCORRECT. IT SHOULD BE LABELED '4AGTRS' TO AGREE WITH CONTACT DESIGNATION ON THE SAME SHEET AS THE BREAKER TRIP CIRCUIT. 2-ON SHEET 44, THE PART NUMBER SHOWN FOR THE THREE 600/120V 50VA TRANSFORMERS (ITEM NO.56) IS INCORRECT. ITEM NO.56 AS DESCRIBED IN THE PARTS LIST IS A 'POSITION SELECTOR SWITCH'. IN FACT, THERE IS NO 600/120V 50VA TRANSFORMER EVIDENT IN THE PARTS LIST. 3-ON SHEET 49, THE ITEM NUMBER GIVEN FOR THE 1600RF BREAKER IS ITEM NO.40. HOWEVER, ITEM NO.40 IN THE "LIST OF MATERIALS" IS A POSITION SWITCH NOT A BREAKER.THE CORRECT ITEM NO. FOR THE BREAKER NEEDS TO BE PROVIDED.	DOCUMENTATION NEEDED
1W376AX01	KA	**SHIP'S SERVICE STORES REFRIGERATION** THE CONFIGURATION OF THE SHIPS STORES REEFER SYSTEM DOESN'T ENABLE RAPID PULL DOWN OF THE FREEZER COMPARTMENT WITH BOTH MACHINES AS REQUIRED BY THE SOR. PROVIDE SERVICE TO ENABLE SIMULTANIOUS PULL DOWN OF THE FREEZER WITH THE TWO MACHINES AND DEMONSTRATE THIS TO SHIPS FORCE.	

Open Warranty Items

TRIAL CARD	SCREEN	DESCRIPTION	COMMENTS
1W393OP01RU	KA	**NAUTRONIX ULTRASHORT BASELINE NAV SYS** A PROBLEM WHICH MAY HAVE BEEN PRESENT FROM DELIVERY IN THE NAUTRONIX SYSTEM WILL REQUIRE FURTHER INVESTIGATION. SPECIFICALLY TWO AREAS OF CONCERN HAVE BEEN FOUND WHICH MAY BE RELATED: THE TILT INDICATOR MOUNTED IN THE TRANSDUCER ASSEMBLY SHOWS A 4 DEGREE ANGLE WHEN THE SHIP IS APPROXIMATELY LEVEL. THERE IS NO INDICATION THAT THE TRANSDUCER IS ACTUALLY MOUNTED AT THAT ANGLE AND THEREFORE THE TILT SENSOR MAY BE DEFECTIVE. 2) THE TEMPERATURE SENSOR IN THE HYDROPHONE ARRAY READS -22C WHEN IT SHOULD READ +22C. THIS EFFECTS THE AUTOMATIC SOUND VELOCITY CALCULATION. 3) THE UNIT IS NOT ABLE TO CORRECTLY DETERMINE RANGE TO A PINGER IN ULTRASHORT BASELINE MODE. PROVIDE SERVICE TO ALLEVIATE THE PROBLEM WITH THE NAUTRONIX SYSTEM.	
1W444EL01	KA	**BILGE PUMP CONTROLLER** THE INTERLOCK ON THE BILGE PUMP CONTROLLER IS BROKEN. PROVIDE SERVICE TO REPAIR/REPLACE DOOR INTERLOCK ON THE BILGE PUMP CONTROLLER SO AS TO GAIN ENTRY TO SAME.	INTERLOCK ON CONTROLLER NEEDS TO BE REPAIRED
1W476MP01	KA	**#6 DIESEL GENERATOR JW TEMP INDICATIONS** THERE IS A LARGE DISPARITY BETWEEN THE LOCAL AND REMOTE TEMPERATURE READINGS FOR THE JACKET WATER OF THIS ENGINE. WHEN OPERATING AT 450 KW THE LOCAL JACKET WATER GAGE INDICATED 190F WHILE THE DIGITAL DISPLAY ON THE CIMPLICITY 3000 MONITOR CRT (GE) INDICATED 163F. PROVIDE THE SERVICE TO DETERMINE THE CAUSE OF THIS DEFICIENCY AND RECTIFY SAME TO THE SATISFACTION OF THE SHIPS FORCE.	MCS READING IS APPROX. 25 DEGREES LOWER THAN WHAT IS AT THE LOCAL READ OUT
1W477EL01	KA	**SS SERVICE BUS AUTOSYNCHRONIZING** #5 DIESEL GENERATOR FAILED TO PARALLEL WITH #6 DIESEL GENERATOR ON THE SHIP'S SERVICE BUS WHEN GIVEN THE PROPER KEY STROKES ON THE CIMPLICITY 3000 SYSTEM LOCATED IN THE MCS (GE). PARALLEL OPERATION WAS EVENTUALLY ACCOMPLISHED LOCALLY (AT THE SWITCHBOARD WITH THE "LOCAL REMOTE SWITCH" IN LOCAL) USING THE AUTOSYNCHRONIZING MODE. PROVIDE SERVICE TO DETERMINE THE CAUSE OF THIS DEFICIENCY AND RECTIFY IT TO THE SATISFACTION OF THE SHIP'S FORCE.	PROBLEM REOCCURING. NOT ACCEPTABLE FROM ACCU REQTS.

Open Warranty Items

TRIAL CARD	SCREEN	DESCRIPTION	COMMENTS
1W482CC01	KA	**ALDEN WEATHERFAX** THE ALDEN WEATHERFAX (MODEL TR-1V) HAS FAILED. SYMPTOMS: 1-VERY LOW RECEIVER SENSITIVITY, ALL FREQUENCIES, COMPARED WITH SIMILAR UNITS AND OTHER RECEIVERS ON VESSEL. 2-EXTREMELY HIGH LEVEL OF INTERNALLY GENERATED SPURIOUS SIGNALS, OR "BIRDIES", AS EVIDENCED BY HETERODYNES APPEARING IN THE AUDIO OUTPUT AND MANIFESTING AS DISTORTION ON THE RECEIVED MAP. 3-SCORCHED CIRCUIT BOARD FOUND UPON OPENING CASE. PROVIDE SERVICE TO REPLACE THE ALDEN WEATHERFAX (MODEL TR-1V) WITH A FULLY FUNCTIONAL UNIT.	WEATHER FAX DOES NOT OPERATE
1W484HB01	KA	**SHIP'S LAUNDRY DRAINAGE SYSTEM** DURING NORMAL USAGE OF MAYTAG WASHING MACHINES DRAIN SIZE IS INADEQUATE TO PROMPTLY EVACUATE BOTH WASHERS SIMULTANEOUSLY. THIS DEFICIENCY CAUSES FLOODING OF THE SHIP'S LAUNDRY. PROVIDE THE SERVICE TO CONFIGURE PROPERLY SIZED DRAINS TO ACCOMMODATE SIMULTANEOUS MAYTAG WASHER DRAINAGE.	
1W491EL01	KA	**CIMPLICITY 3000 MONITOR (GE)** LOSS OF 24V TO ANY ONE OR MORE OF THE DIESEL GENERATORS NUMBERED 1 THROUGH 6 RESULTS IN A RED FLAG ON THE CIMPLICITY 3000 SCREEN WITHOUT ANY AUDIBLE ALARM BEING GATED. PROVIDE SERVICE TO INCORPORATE BOTH AN AUDIBLE AND VISUAL ALARM ON THE CIMPLICITY 3000 SCREEN IN THE EVENT OF 24V FAILURE AT SSDG'S #1 - #6.	GE INSTALLED ALARMS INTO THE SERIES 6 COMPUTER, BUT STILL CANNOT DETERMINE WHAT IS WRONG WITH #2 MAIN ENGINE. ENGINE PRINTOUTS FROM PUCKETT MAY NOT ACTUALLY MATCH WHAT IS INSTALLED.
1W498DK01	KA	**ALVIN CARRIAGE** THE LOCKING MECHANISM ON THE ALVIN CARRIAGE DID NOT MOVE OR ENGAGE THE TRACK WHEN THE HPU WAS SECURED AND HYDRAULIC PRESSURE WAS 0 PSIG FOR TWO HOURS. REPAIR LOCK MECHANISM TO ENGAGE WHEN PRESSURE IS SECURED.	
1W509OP01	KA	**SPERRY GMDSS CONSOLE** NEEDS SOFTWARE UPGRADE TO CURRENT AS OF SHIP INSTALLATION DATE.	
1W523DK01	KA	**WEATHER DECK DOORS** ALL THE WEATHER DECK DOORS (1-26-1; 1-66-3; 1-71-2; 1-85-0; 1-94-2;01-94-2;01-16-1;01-16-4;01-16-2;01-71-2;01-87-2;02-96-1;02-64-1;02-67-1;02-46-1;02-42-2;02-62-0;03-50-0;04-64-1;0 4-64-2;04-57-0) WERE NOT SEALED WHERE THE HINGES AND DOOR HANDLES WERE FASTENED. AS A CONSEQUENCE WATER HAS/IS LEAKED (ING) INSIDE THE DOOR STRUCTURES AND EXCESSIVE RUST AND CORROSION IS EVIDENT. PROVIDE SERVICE TO REPAIR/REPLACE RUSTED AND CORRODED DOORS AND WATERPROOF AND PROPERLY SEAL ALL REPAIRED/REPLACED DOORS.	TECH ISSUE. (2) DOORS INSTALLED. ALL NEED TO BE REPLACED.

Open Warranty Items

TRIAL CARD	SCREEN	DESCRIPTION	COMMENTS
1W525OP01	KA	**"ALVIN" SYSTEM TOW WINCH** UPON INSPECTION THE COMPARTMENT HOUSING THE TOW WINCH DRIVE WAS FOUND TO BE COMPLETELY FLOODED WITH BRAKISH WATER OIL SLURRY. THE COMPARTMENT WAS PUMPED OUT AND CLEANED. AFTER DE-WATERING THE EIGHT BOLTS SECURING THE HYDRAULIC MOTOR AND GEARCASE TO THE TORQUE ARM HAD BEEN INSTALLED WITH NO NUTS AND LOCKWASHERS. THIS CAUSED THE MOTOR COMBINATION TO BACK OFF THE SHAFT SUFFICIENTLY TO ALLOW THE HYDRAULIC SEAL TO BECOME UNCOVERED. (ASSUME THIS TO BE THE SOURCE OF THE OIL IN THE SLURRY MIX). REBOLTED AND FASTENED MOTOR PROPERLY AND RESET HYDRAULIC HOSE THAT WAS FOUND TWISTED ½ TURN. RAN PRESSURE TEST SATISFACTORILY. ANNOTATE AND CREDIT SIXTY MAN HOURS TO THE SHIP'S FORCE FOR THE ABOVE WORK. PROVIDE SERVICE DURING PSA TO COMPLETELY INSPECT MOTOR/ GEARCASE AND ALL RELATED HYDRAULIC SEALS. INSURE THAT SIMILAR OCCURANCE DOESN'T HAPPEN AT A FUTURE DATE.	RESULTS OF OPEN AND INSPECT
1W526NV01	KA	**SPERRY GYROCOMPASS FAILURE ALARM** THE UNITS PROVIDED S/N 811 & 812 DO NOT MATCH THE DOCUMENTATION PROVIDED. UNITS ARE FITTED FOR INTERNAL INCANDESCENT LAMPS RATHER THAN THE NEON LAMPS CALLED FOR IN THE DOCUMENTATION AND PROVIDED FOR IN THE VRS. PROVIDE SERVICE TO HAVE VENDOR'S REP BOARD VESSEL AT PSA AND PROVIDE SHIP'S FORCE WITH PROPER INTERNAL INCANDESCENT LAMPS AS WELL AS APPROPRIATE DOCUMENTATION.	DOCUMENTATION REQUIRED
1W528AX01	KA	**BILGE/BALLAST/FIRE PUMP** THE BILGE/BALLAST/FIRE PUMP IS EXHIBITING RANDOM AND EXCESSIVE VIBRATION RESULTING IN LARGE MOVEMENTS OF THE PUMP AND SUCTION/DISCHARGE PIPING. IT APPEARS THAT THE PUMP IS SOUND AND THAT THE VIBRATION IS FLOW INDUCED. PROVIDE SERVICE TO IDENTIFY AND CORRECT THESE VIBRATIONS TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.	ONLY WAY TO CORRECT PUMP IS TO THROTTLE IN ON THE OVBD PUMP. THIS PUMP IS OPERATED FROM MULTIPLE STATIONS, POTENTIAL PROBLEM.

Open Warranty Items

TRIAL CARD	SCREEN	DESCRIPTION	COMMENTS
1W541MP01SRU	KA	**SSDG #4 HYDROMECHANICAL SHUT DOWN** THE DIVERTER, VALVE GROUP 4W-1701 FAILED IN SERVICE SPRAYING THE ADJACENT GENERATOR UNIT WITH ATOMIZED LUBE OIL AND CREATING ALL THE CONDITIONS FOR A CLASS BRAVO CONFLAGRATION. THIS IS THE THIRD SUCH FAILURE OF THE SAME DEVICE IN THE SAME MANNER IN THE PAST TWO-MONTH PERIOD. THE PREVIOUS TWO FAILURES HAVE BEEN ANNOTATED IN THE WARRANTY SYSTEM AND OCCURRED ON SSDG #1 AND SSDG #5. THERE IS AMPLE EVIDENCE TO INDICATE THAT THE HYDROMECHANICAL SHUT DOWN DEVICE IS MIS-DESIGNED/APPLIED AND PRESENTLY SERVES MORE AS A FIRE HAZARD THAN A SAFETY DEVICE. PROVIDE SERVICE TO REMOVE ALL THE HAZARDOUS VALVE GROUP, DIVERTER 4W-1701 HYDROMECHANICAL SHUT DOWN DEVICES AND REPLACE SAME WITH SAFE, VIABLE ONES. TEST REPLACEMENTS TO THE SATISFACTION OF ALCON.	AWAITING PARTS FROM PUCKETT
1W543CC01SRU	KA	**SPERRY GMDSS CONSOLE** UNABLE TO TRANSMIT CORRECT HF DSC CALL. NO ROUTINE OR SAFETY TEST CALLS HAVE SUCCESSFULLY BEEN ACKNOWLEDGED BY ANY SHORE STATION. NORMAL HF SITOR TRAFFIC IS TRANSMITTED AND RECEIVED WITH NO PROBLEM. PROVIDE SERVICE TO RECTIFY AND REMEDY ABOVE DESCRIBED MALADY.	
1W544EP01	KA	**OILY WATER SEPARATOR** THE OILY WATER SEPARATOR WILL NOT PROCESS OILY WATER AT ITS RATED CAPACITY OF 4 GPM. PROVIDE SERVICE TO ENABLE THIS DEVICE TO PERFORM AS RATED. DEMONSTRATE THE OILY WATER SEPARATOR TO ALCON AFTER RE-CONFIGURING TO ENABLE THIS DEVICE TO PERFORM WITHIN DESIGN PARAMETERS.	UNIT NOT PUTTING OUT RATED CAPACITY
1W545EL01	KA	**STBD ENGINE ROOM SUPPLY FAN** THE DLI "EXPERT ALERT" VIBRATION MONITOR AND ANALYSIS SYSTEM HAS FLAGGED THIS MACHINE FOR THE FOLLOWING FAULTS: 1-EXTREME IMBALANCE 2-SERIOUS BALL BEARING WEAR. PROVIDE SERVICE TO FURTHER INVESTIGATE THIS DIAGNOSIS AND TO MAKE ALL REPAIRS AND/OR MODIFICATIONS NECESSARY TO CORRECT THE MACHINERY FAULTS WHICH ARE FOUND.	VIBRATION
1W547MP01	KA	**#3 PROPULSION ROOM A/C PLANT** THE DLI "EXPERT ALERT" VIBRATION MONITORING AND ANALYSIS SYSTEM HAS FLAGGED THIS MACHINE FOR THE FOLLOWING FAULTS: 1- SERIOUS INDICATION OF POSSIBLE PARALLEL MISALIGNMENT 2-MODERATE MOTOR MOUNTING OR END BELL LOOSENESS OR RESONANCE. PROVIDE SERVICE TO FURTHER INVESTIGATE THIS DIAGNOSIS AND TO MAKE ALL REPAIRS AND/OR MODIFICATIONS NECESSARY TO CORRECT THE MACHINERY FAULTS WHICH ARE FOUND.	VIBRATION

Open Warranty Items

TRIAL CARD	SCREEN	DESCRIPTION	COMMENTS
1W548MP01	KA	**#5 SSDG** THE DLI "EXPERT ALERT" VIBRATION MONITORING AND ANALYSIS SYSTEM HAS FLAGGED THIS MACHINE FOR THE FOLLOWING FAULTS: 1- MODERATE INDICATION OF ENGINE MISFIRE 2- SLIGHT GENERATOR BALL BEARING LOOSENESS PROVIDE SERVICE TO FURTHER INVESTIGATE THIS DIAGNOSIS AND TO MAKE ALL REPAIRS AND/OR MODIFICATIONS NECESSARY TO CORRECT THE MACHINERY FAULTS WHICH ARE FOUND.	VIBRATION
1W549MP01	KA	**#6 SSDG** THE DLI "EXPERT ALERT" VIBRATION MONITORING AND ANALYSIS SYSTEM HAS FLAGGED THIS MACHINE FOR THE FOLLOWING FAULTS: 1- MODERATE INDICATION OF ENGINE MISFIRE. PROVIDE SERVICE TO FURTHER INVESTIGATE THIS DIAGNOSIS AND TO MAKE ALL REPAIRS AND/OR MODIFICATIONS NECESSARY TO CORRECT THE MACHINERY FAULTS WHICH ARE FOUND.	VIBRATION
1W550AX01	KA	**PORT ENGINE ROOM SUPPLY FAN** THE DLI "EXPERT ALERT" VIBRATION MONITORING AND ANALYSIS SYSTEM HAS FLAGGED THIS MACHINE WITH THE FOLLOWING FAULTS: 1- EXTREME IMBALANCE 2- MODERATE BALL BEARING WEAR. PROVIDE SERVICE TO FURTHER INVESTIGATE THIS DIAGNOSIS AND TO MAKE ALL REPAIRS AND/OR MODIFICATIONS NECESSARY TO CORRECT THE MACHINERY FAULTS WHICH ARE FOUND.	VIBRATION
1W552DK01	KA	**ANCHOR WINDLASS** BOTH DECK CONTROL STATIONS HAVE THE STOP/START CONTROL PUSH BUTTONS FROZEN IN PLACE. BOTH PUSH BUTTONS AND CONTROL BOX ARE EXTREMELY UNSUITED FOR EXTREMELY HARSH MARINE ENVIRONMENTS. DOCUMENTATION PROVIDED SHIP DOES NOT PROVIDE ANY INFORMATION ON HPU MOTOR CONTROLLER AND ASSOCIATED SPARE PARTS LISTINGS. PROVIDE SERVICE TO INSTALL PROPER DOCUMENTATION AND EQUIPAGE FOR THE STARTING AND STOPPING OF THE ANCHOR WINDLASS.	NEED INFO FOR SYSTEMS HPU AND ASSOCIATED ELECTRICAL DRAWINGS. NOT IN TECH MANUAL
1W557HB01	KA	**ORCA S/W SOLENOID VALVE** ORCA MARINE SANITATION DEVICE SALT WATER SOLENOID VALVE IS MECHANICALLY FAULTY. DURING REST PERIOD VALVE WILL BIND OPEN CAUSING THE TANK TO NEEDLESSLY FILL TO A LEVEL WHICH GATES A PERMISSIVE TO INITIATE A NEW TREATMENT CYCLE WHEN IT IS NOT REQUIRED. PROVIDE SERVICE TO BRING AND INSTALL A NEW VALVE AND TEST SAME TO SATISFACTION OF SHIP'S FORCE REPRESENTATIVE.	
1W559HB01	KA	**ORCA MSD – BACKWASH GAUGE** BACKWASH GAUGE ON ORCA MSD BACK WASH PUMP IS DEFECTIVE PROVIDE SERVICE TO BRING A REPLACEMENT GAUGE TO VESSEL AND INSTALL SAME TO SATISFACTION OF SHIP'S REPRESENTATIVE.	HALTER TO PROVIDE NEW GAUGE

Appendix (A)

AGOR 25 Tasking Letter Summary

13 July 1998

Includes:

Tasking Letter #1 (NAVSEA ltr Ser 325E/6289 of 19 Nov 96)
Tasking Letter #2 (NAVSEA ltr Ser 325E/7025 of 13 Mar 97)
Tasking Letter #3 (NAVSEA ltr Ser 325E/7046 of 10 Jun 97)
Tasking Letter #4 (NAVSEA ltr Ser 325E/7058 of 17 Sep 97)
Tasking Letter #5 (NAVSEA ltr Ser 325E/7065 of 10 Nov 97)
Tasking Letter #6 (NAVSEA ltr Ser 325E/7070 of 24 Dec 97)
Tasking Letter #7 (NAVSEA ltr Ser 325E/1099 of 13 Jul 97)

AGOR 25 TASKING LETTER NO. 1 - DEFERRED WORK ITEMS

1) CRANE MAINTENANCE (24-2A012DK01S)
~~PROVIDE A MEANS (PLATFORMS OR SAFETY RAILS) ON THE PORT AND STBD HEAVY LIFT BOOM CRANES TO ENSURE PERSONNEL SAFETY WHILE CONDUCTING MAINTENANCE ON THE HOIST WINCH DRUM.~~

DELETED BY TL-3 (ENCLOSURE 5)

2) TABLE MOUNTED STEAM KETTLE (24-2G026SP01)
~~PROVIDE A STAINLESS STEEL WIRE OR PERFORATED BASKET SIZED FOR INSERTION IN THE KETTLE. PROVIDE A REMOVABLE COVER.~~

DELETED BY TL-2 (ENCLOSURE 5)

3) ANCHOR LINKS (1B087DK01, 2G026DK01)
PROVIDE SPARE DETACHABLE LINKS AND ANCHOR CONNECTING LINKS.

4) REMOVABLE CAPSTAN (SIO-1)
INSTALL A REMOVABLE CAPSTAN ON THE AFT WORKING DECK. THE CAPSTAN HAS BEEN ORDERED ON SUPPLEMENTAL IOL #1.

5) INSTALL THERMOSALINOGRAPH (SIO-3)
INSTALL THERMOSALINOGRAPH REQUIRED FOR MULTIBEAM SONAR OPERATIONS. MATERIAL HAS BEEN ORDERED ON SUPPLEMENTAL IOL # 1.

6) SCIENTIFIC INFORMATION SYSTEM (SIS) (SIO-4, 57)
COMPLETE INSTALLATION AND INTEGRATION OF SIS AND INSTALL UPGRADED CCTV SYSTEM.

7) F.O. OVERFLOW (SIO-8)
INSTALL F.O. DAY TANK OVERFLOW TO F.O.T. #5.

8) DESKS AND COMPUTER WORKSTATIONS (SIO-12)
INSTALL ADDITIONAL DESKS AND COMPUTER WORKSTATIONS IN STATEROOMS.

9) SINK IN MESS ROOM (SIO-14)
INSTALL ADDITIONAL SINK *AND SODA MACHINE* IN MESS ROOM.

MODIFIED BY TL-2 (DW2)

10) DIVING LOCKER TO ELECTRONICS STOWAGE AND T/S (SIO-16, 58)
~~CONVERT DIVING LOCKER (FWD) TO ELECTRONICS REPAIR STOWAGE. CONVERSION FOR AFT DIVING LOCKER TO PUBLIC T/S WILL BE EVALUATED BASED ON RESULTS OF FEASIBILITY STUDY #8.~~

DELETED BY TL-3 (ENCLOSURE 5) - FWD DIVING LOCKER WILL NOT BE CONVERTED TO ELECTRONICS REPAIR STOWAGE. CONVERSION OF AFT LOCKER TO PUBLIC T/S COMPLETED BY MWR # 52.

AGOR 25 TASKING LETTER NO. 1 - DEFERRED WORK ITEMS

11) HAZARDOUS MATERIALS LOCKER TO RES TECH WORKSHOP (SIO-17)
CONVERT HAZARDOUS MATERIALS LOCKER TO A WORKING DECK RES TECH WORKSHOP.

12) FUME HOOD EXHAUST (SIO-19, 1G026AX01)
PROVIDE INDIVIDUAL AND SEPARATE REMOTE BLOWERS AND EXHAUSTS FOR THE FUME HOODS IN THE BIOCHEM/ANALYTIC LAB AND THE WET LAB.
PROVIDE A "Y" DAMPER FOR THE WET LAB AND BIOCHEM/ANALYTIC LAB EXHAUSTS SO THE HVAC SYSTEM IN THE LABS CAN BE BALANCED DURING FUME HOOD OPERATION.

13) FLAMMABLE LIQUID STOREROOM (SIO-20)
CONVERT OUTBOARD MOTOR STOREROOM TO A FLAMMABLE LIQUID STOREROOM. RIP-OUT EXISTING HULL FITTINGS AND INSTALL SHELVES, LOCKERS, WORK TABLE, AND FIXED FIRE EXTINGUISHING SYSTEM. INSULATE SPACE, MODIFY HVAC AND ALARM SYSTEM.

14) AIR-POWERED EDUCTORS FOR BILGE SUCTION (SIO-22)
INSTALL ~~AIR-POWERED EDUCTORS~~ *ELECTRIC DIAPHRAGM PUMPS* TO GENERATOR ROOM BILGE SUCTION PIPING TO MAKE IT POSSIBLE TO REMOVE MODERATE AMOUNTS OF WATER.

MODIFIED BY TL-3 (DW-1)

15) TELEVISION ANTENNA (SIO-25)
~~INSTALL A TRAINABLE TV ANTENNA SYSTEM TO ENHANCE RECEPTION.~~

DELETED BY TL-3 (ENCLOSURE 5)

16) L.O. TOTALIZER (SIO-26)
INSTALL L.O. TOTALIZER (OIL VOLUME METER) TO MONITOR ENGINE LUBE OIL CONSUMPTION.

17) DAMAGE CONTROL LOCKER (SIO-28)
ADD DAMAGE CONTROL LOCKER FORWARD (01-16-4). ADD RACKS IN AFT DAMAGE CONTROL LOCKER TO SECURE AND CONSOLIDATE EMERGENCY EQUIPMENT.

18) SEWAGE SYSTEM MODIFICATIONS (SIO-30, SIO-44/84, 1B007EP01, 1B008EP01, 1B017EP01, 1A001EP01, 1A002EP01, 1G006EP01, 1G007EP01, 1G008EP01, 1G010EP01, 1G011EP01, 1G014EP01)

PROVIDE AND INSTALL THE FOLLOWING SEWAGE SYSTEM MODS:

- A MONEL 1/2 INCH GAS SAMPLING VALVE ON THE VCHT TANK MANHOLE COVER AND THE MSD TANK MANHOLE COVER.
- REPAIR HOLES IN SEWAGE SYSTEM COAMING.
- INSTALL A SENSOR TO DETECT OVERFLOW WITHIN THE COAMING WITH AN ALARM TO THE MCS CONSOLE.
- INSTALL SPRAY SHIELDS AS REQUIRED.
- INSTALL A CONNECTION TO ALLOW FLUSHING OF THE SEWAGE DISCHARGE PIPING WITH THE FIREMAIN SYSTEM.
- INSTALL AN EXHAUST TO VENT THE COAMING AREA. INTAKE TO BE WITHIN 9 INCHES OF THE DECK.
- RELOCATE POTABLE WATER LINE AND VALVES TO PASS ABOVE THE SEWAGE SYSTEM COAMING.
- INSTALL A SINK, TOWEL HOLDER, AND SOAP DISPENSER NEAR THE CHT TREATMENT TANK.
- INSTALL SALTWATER WASHDOWN NOZZLES IN THE SEWAGE TANK TO PROVIDE SANITARY WASHDOWN OF THE INTERIOR TANK SIDES.
- PROVIDE A PRESSURE GAUGE AT THE SHIP'S SERVICE LOW PRESSURE AIR LINE FOR EACH AIR-OPERATED SEWAGE DISCHARGE VALVE.
- INSTALL SEWAGE TANK OVERFLOW TO GENERATOR ROOM BILGE TO AVOID POSSIBLE OVERFLOW INTO 1ST PLATFORM STATEROOMS.
- INSTALL "LOSS OF VACUUM" ALARM ON SEWAGE SYSTEM.
- *RELOCATE SEWAGE TANK SOUNDING TUBE.*
- *ADD SEWAGE CONTAINMENT COAMING FOR MSD UNIT.*

MODIFIED BY TL-2 (DW6)

19) HOSPITAL MODIFICATION (SIO-39, 1G004MD01, 1G005MD01, 1G006MD01, 1G007MD01, 1G008MD01, 1G009MD01, 1G010MD01, 1G011MD01)

- PROVIDE AND INSTALL THE FOLLOWING IN THE HOSPITAL:
- ONE ADDITIONAL PATIENT BERTH.
- REFRIGERATOR FOR MEDICINALS INCLUDING MOUNTING FOUNDATION AND ELECTRICAL CONNECTION.
- COUNTER FOR HOLDING EXAM AND TREATMENT EQUIPMENT.
- SMALL INSTRUMENT STERILIZER INCLUDING MOUNTING SHELF AND ELECTRICAL CONNECTION.
- SURGICAL/EXAM LIGHT.
- SURGICAL/EXAM TABLE.
- SAFE AND MOUNTING FOUNDATION FOR CONTROLLED MEDICAL ITEMS.
- IV POLE AND SECURING BRACKET.
- EMERGENCY POTABLE WATER BOTTLES AND STORAGE BRACKETS.
- ADD EMERGENCY CALL IN HOSPITAL T/S.

AGOR 25 TASKING LETTER NO. 1 - DEFERRED WORK ITEMS

20) UPS FOR SCIENTIFIC ELECTRONICS (SIO-41)
INSTALL ADDITIONAL UPS IN ELECTRONICS COMPUTER LAB AS SHOWN IN ECP 34 SKETCH SIS-1. 10KVA 3-PHASE UPS EQUIPMENT HAS BEEN ORDERED ON SUPPLEMENTAL IOL #1.

21) DEIONIZATION FILTERS FOR LAB QUALITY WATER (SIO-45)
INSTALL DEIONIZATION FILTERS FOR LAB QUALITY PURE WATER. FILTERS HAVE BEEN ORDERED ON SUPPLEMENTAL IOL #1.

22) RO UNIT OUTPUT FLOWMETERS (1B007AX01, SIO-77)
PROVIDE DISCHARGE TOTALIZING FLOWMETERS ON REVERSE OSMOSIS UNITS TO MEASURE PRODUCTION.

23) RO UNIT DISCHARGE FILTER (SIO-80, 1A001MP01)
PROVIDE AND INSTALL DISCHARGE DE-IONIZATION FILTERS ON THE REVERSE OSMOSIS UNITS IN ORDER TO MAKE CHLORIDE LEVELS IN THE WATER ACCEPTABLE FOR SSDG/EDG JACKET WATER USE.

24) DISHWASHER EXHAUST VENTILATION (SIO-88)
PROVIDE EXHAUST VENTILATION ABOVE THE GALLEY DISHWASHER.

25) HYDROBOOM VARIABLE SPEED CONTROL (SIO-94)
PROVIDE VARIABLE SPEED CONTROL FOR HYDROBOOM NECESSARY FOR SAFE HANDLING OF SCIENCE PACKAGES.

26) RELOCATE CO2 BANK (SIO-97, 1G029DC01)
RELOCATE THE CO2 BANK FROM SCIENTIFIC STOREROOM NO. 2 TO THE WINCH ROOM *AND INSTALL CO2 FIXED FLOOD SYSTEM SIRENS.*

MODIFIED BY TL-2 (DW17)

27) STOREROOM STOWAGE AIDS (SIO-103, 1B025SP01)
PROVIDE REQUIRED STOWAGE AIDS IN ALL SHIP STOREROOMS TO CORRECTLY AND SAFELY STOW ITEMS.

AGOR 25 TASKING LETTER NO. 2 - DEFERRED WORK ITEMS

1) ANNOUNCING SYSTEM (SIO-13)
INSTALL MISSION ANNOUNCING SYSTEM TO PROVIDE AN EFFECTIVE MEANS OF COORDINATING RESEARCH OPERATIONS AND EXCHANGING INFORMATION AMONG LABS AND WORK STATIONS. REFERENCE ECP 34 ARRANGEMENT SKETCHES.

2) SINK IN MESS ROOM (SIO-14, TL1-DW9)
MODIFY TASKING ITEM TL1-DW9 OF REFERENCE (A) TO INCLUDE THE INSTALLATION OF A SODA MACHINE .

3) LAUNDRY EQUIPMENT (SIO-24)
INSTALL ONE ADDITIONAL CLOTHES WASHER AND ONE/TWO DRYERS IN LAUNDRY.

4) WATER TIGHT COAMING (SIO-27)
REPLACE EXISTING MAIN LAB EXTERIOR DOUBLE DOOR AND PERMANENT COAMING WITH A WEATHERTIGHT DOUBLE-WIDE DOOR WITH REMOVABLE WT COAMING THAT HAS FLUSH DECK SEAL AND SINGLE DOOR INSERT FOR AT-SEA ACCESS.

5) POTABLE WATER ISOLATION VALVES (SIO-29)
INSTALL POTABLE WATER SYSTEM ISOLATION VALVES AT EACH DECK LEVEL. INSTALL HOT WATER HEATER ISOLATION VALVES AND CROSS-CONNECT PIPING AT EACH HOT WATER HEATER.

6) SEWAGE SYSTEM MODIFICATION (SIO-30/44/84, 1G006EP01, 1G008EP01, TL-1 DW-18)
MODIFY TASKING ITEM TL-1 DW-18 OF REFERENCE (A) TO INCLUDE:
- RELOCATE SEWAGE TANK SOUNDING TUBE.
- ADD SEWAGE CONTAINMENT COAMING FOR MSD UNIT.

7) ADDITIONAL SHIP SERVICE COMPRESSED AIR OUTLETS (SIO-34)
PROVIDE ~~FIVE (5)~~ *ELEVEN (11)* SHIP SERVICE COMPRESSED AIR OUTLETS TO AREAS DESIGNATED BY SHIP'S FORCE.

MODIFIED BY TL-3 (DW2)

8) IMPROVE INTERIOR ACCESS DOORS (SIO-35)
TO FACILITATE MOVING RESEARCH EQUIPMENT AND SUPPLIES FROM THE SCIENTIFIC STOREROOM DIRECTLY TO LABORATORIES, ENLARGE FOLLOWING INTERIOR 26 INCH DOORS TO 53 INCH DOUBLE DOORS: SCIENTIFIC STOREROOM #1 (FR 21), MAIN LAB (FR 27), AND BIO/ANALYTIC CLEAN LAB (FR 30).

9) HEAVY LIFT CRANE CONTROLS (SIO-37) REPLUMB HEAVY LIFT CRANE CONTROLS TO PERMIT SIMULTANEOUS USE OF WHIP AND BOOM.

AGOR 25 TASKING LETTER NO. 2 - DEFERRED WORK ITEMS

10) INMARSAT ANTENNA (SIO-38, 1G001CC01)
~~RELOCATE EXISTING INMARSAT "A" ANTENNA TO 05 LEVEL OR MAIN MAST YARDARM PLATFORM.~~ INSTALL A NEW INMARSAT "B" ANTENNA (PURCHASED ON SIOL) ON MAST, MAST YARDARM, OR 05 LEVEL.

MODIFIED BY TL-3 (DW 3)

11) SS ELECTRICAL OUTLETS (SIO-40)
INSTALL ADDITIONAL SHIP SERVICE ELECTRICAL OUTLETS: ~~FOUR~~ *THREE (3)*, 480V/3-PH UTILIZING SPARE CIRCUIT BREAKERS IN SHIP SERVICE POWER PANELS.

MODIFIED BY TL-3 (DW4)

12) FO PURIFIER (SIO-54)
PROVIDE AND INSTALL A SECOND FUEL OIL PURIFIER UNIT TO BE USED AS A BACKUP AND DURING MAINTENANCE.

13) MCS "UPS IN USE" ALARM (SIO-75)
PROVIDE A "UPS IN USE" ALARM/INDICATOR AT THE MCS CONTROL STATION.

14) SAFETY RAIL FOR UPTAKE VERTICAL LADDER (SIO-81, 1G010MP01)
~~PROVIDE AND INSTALL A CLIMBER SAFETY RAIL FOR THE VERTICAL LADDER IN THE UPTAKE. MODIFY LADDER TO ELIMINATE NONCONTINUOUS TRANSITIONS.~~

DELETED BY TL-3 (ENCLOSURE 5) - GRATING PLATFORMS INSTALLED

15) CHILL WATER CIRCULATION PUMP (SIO-86)
~~PROVIDE AND INSTALL A BACKUP CHILL WATER CIRCULATION PUMP INCLUDING A DISCHARGE CHECK VALVE.~~ *REPLACE EXISTING TWO CHILL WATER PUMPS WITH LARGER UNITS EACH WITH SUFFICIENT CAPACITY TO MEET SYSTEM REQUIREMENTS.*

MODIFIED BY TL-3 (DW10)

16) HYDROBOOM PLATFORM (SIO-92)
PROVIDE REMOVABLE WORK PLATFORMS FOR ~~PORT AND~~ STBD HYDROBOOM NECESSARY FOR SAFE HANDLING OF SCIENCE PACKAGES.

MODIFIED BY TL-4 (MOD1)

17) RELOCATE CO2 BANK (SIO-97, SIO - 118, *1G001DC01S, TL-1 DW-26)
MODIFY TASKING TL-1 DW-26 OF REF (A) TO INCLUDE INSTALLATION OF CO2 FIXED FLOOD SYSTEM SIRENS. COMPLETED BY MWR #51.

AGOR 25 TASKING LETTER NO. 2 - POST DELIVERY (FUNDED) WORK ITEMS

1) ADDITIONAL DIAL TELEPHONES AND CIRCUITS (SIO-9)
INSTALL TWENTY (20) ADDITIONAL DIAL TELEPHONES AND JACKS REQUIRED TO PROVIDE EFFECTIVE INTERIOR AND EXTERIOR COMMUNICATIONS, INCLUDING COMPUTER MODEMS FOR SCIENCE AND CREW STATEROOMS. REFERENCE ECP 34 SKETCHES: SIS-1, 1A, 2-8, AND 10-13.

2) FOREMAST MODIFICATIONS (SIO-46, 52)
MODIFY FOREMAST TO ELIMINATE LINE HANDLING INTERFERENCE. INSTALL WOCE IMET METEOROLOGICAL PACKAGE.

3) BOSUN WORKSHOP MODIFICATION (SIO-89) PROVIDE MECHANICAL EXHAUST VENTILATION FOR THE BOSUN WORKSHOP AND INSTALL HULL INSULATION.

4) ANCHOR HANDLING SYSTEM (SIO-108)
INSTALL DEVIL'S CLAW CHAIN STOPPER/TIGHTENER ARRANGEMENT FORWARD OF WINDLASS TO FIRMLY SECURE ANCHORS IN POSITION.

5) GRAY WATER DRAIN SYSTEM (SIO-109)
MODIFY PLUMBING GRAY WATER DRAIN SYSTEM TO ELIMINATE VACUUM INTERFACE VALVES WHICH HAVE CAUSED FLOODING IN STOREROOM.

6) ANTI-ROLL VENTS (SIO-110)
REMOVE OUTBOARD ANTI-ROLL VENTS AND BLANK OFF SINGLE VENT. RELOCATE TO CENTERLINE. CUT VENT HOLES IN TOP OF SWASH BULKHEADS PORT AND STBD.

7) ACCOMMODATION LADDER (SIO-111)
MANUFACTURE NEW GANGWAY MOUNTING PLATFORM. NEW PLATFORM WITH TURNTABLE MOUNTS TO 2" CENTER BOLTDOWNS TO ALLOW MULTIPLE GANGWAY LOCATIONS. ALLOWS FOR GREATER VARIATION OF TIDAL RANGE AND GANGWAY ANGLE.

8) HEAVY LIFT TRAWL CRANE MODIFICATIONS (SIO-112)
MODIFY STBD HEAVY LIFT (TRAWL) CRANE BOOM AND INSTALL SECOND BOOM CRUTCH TO SUPPORT TOWING AND CORING OPERATIONS.

9) REPLACE WORKBOAT (WHOI-1)
REPLACE WORKBOAT WITH SMALLER RIGID HULLED INFLATABLE BOAT TO SUPPORT SUBMERSIBLE OPERATIONS.

10) WINCH READOUTS ON BRIDGE (WHOI- 4)
INSTALL TWO (2) MARKEY DISPLAY UNITS TO ALLOW OPERATORS TO VIEW WIRE PARAMETERS DURING ROV OPERATIONS.

11) AFFF HOSE REELS (WHOI-5, 1A003DC01)
RELOCATE AFFF HOSEREELS IN LOWER LEVEL GENERATOR ROOM TO IMPROVE FIRE FIGHTING CAPABILITY.

AGOR 25 TASKING LETTER NO. 2 - POST DELIVERY (FUNDED) WORK ITEMS

12) BOW THRUSTER STEERING MOTOR (WHOI-6, 1B066AX01, 1B078AX01)
INSTALL BOW THRUSTER STEERING FAILURE ALARM AND "STEERING MOTOR RUNNING" INDICATOR ON THE FWD BRIDGE WING CONSOLE.

13) SERVICE SINK DISPOSAL (WHOI-7, 2A002SP01)
PROVIDE DISPOSAL UNIT FOR SERVICE SINK IN GALLEY.

14) CALL BELL SYSTEM (WHOI-8, 2A006EL01)
PROVIDE CALL BELL SYSTEM BETWEEN THE BOW LOOKOUT AND THE BRIDGE.

15) SIMRAD/ROBERTSON TECHNICAL SUPPORT (WHOI-11)
PROVIDE TECHREP SUPPORT DURING MISSION DEMONSTRATION TO INSURE SYSTEM IS OPTIMALLY TUNED FOR ROV OPERATION. THE PREFERRED METHOD OF OBTAINING THIS SERVICE IS THROUGH HALTER MARINE VIA MWR.

16) ELECTRICAL CONTROL ENGINEERING SUPPORT (WHOI-12)
PROVIDE TECHREP SUPPORT DURING MISSION DEMONSTRATION TO INSURE CONTROL SYSTEM IS OPTIMALLY TUNED. THE PREFERRED METHOD OF OBTAINING THIS SERVICE IS THROUGH HALTER MARINE VIA MWR.

AGOR 25 TASKING LETTER NO. 2 - ENGINEERING GRANT (FUNDED) ITEMS

THE FOLLOWING PROPOSED WORK ITEM REQUIRES ADDITIONAL INFORMATION TO SUPPORT DECISION MAKING. FEASIBILITY STUDIES AND CONCEPT ENGINEERING IS APPROVED:

1) WORKBOAT LAUNCHING SYSTEM (WHOI-2)
INSTALL A ONE-MAN OPERATED LAUNCHING SYSTEM FOR NEW WORKBOAT.

2) BOW THRUSTER NOISE REDUCTION (WHOI-13)
REDUCE BOW THRUSTER NOISE TO IMPROVE HABITABILITY CONDITIONS IN 1ST PLATFORM STATEROOMS.

3) ADDITIONAL BERTHING (WHOI-14)
PROVIDE ADDITIONAL BERTHING TO ACCOMMODATE MALE/FEMALE CREW MEMBERS AND PROVIDE PRIVATE STATEROOMS FOR KEY UNLICENSED PERSONNEL.

AGOR 25 TASKING LETTER NO. 2 - APPROVED CONFIGURATION ITEM

1) ASHTECH ANTENNA (SIO-107)
INSTALL ASHTECH ANTENNA ARRAY ON EACH CORNER OF THE TOP OF THE WINCH CONTROL HOUSE.

AGOR 25 TASKING LETTER NO. 2 - DELETED WORK ITEMS

THE FOLLOWING WORK ITEM PREVIOUSLY TASKED BY TASKING LETTER NO. 1 IS DELETED:

1) TABLE MOUNTED STEAM KETTLE (24-2G026SP01, TL1-DW2)
PROVIDE A STAINLESS STEEL WIRE OR PERFORATED BASKET SIZED FOR INSERTION IN THE KETTLE. PROVIDE A REMOVABLE COVER.

AGOR 25 TASKING LETTER NO. 3 - DEFERRED WORK ITEMS

1) AIR POWERED EDUCTORS FOR BILGE SUCTION (SIO-22, TL1-DW14)
MODIFY TASKING TL1-DW14 OF REFERENCE (A) TO READ: INSTALL ELECTRIC DIAPHRAGM PUMPS TO GENERATOR ROOM BILGE SUCTION PIPING TO MAKE IT POSSIBLE TO REMOVE MODERATE AMOUNTS OF WATER. PREVIOUS TASKING CALLED OUT AIR POWERED EDUCTORS.

2) ADDITIONAL SHIP SERVICE COMPRESSED AIR OUTLETS (SIO-34, TL2-DW7)
MODIFY TASKING TL2-DW7 OF REFERENCE (B) TO READ: PROVIDE ELEVEN (11) SHIP SERVICE COMPRESSED AIR OUTLETS TO AREAS DESIGNATED BY SHIP'S FORCE. PREVIOUS TASKING DESIGNATED FIVE (5) LOCATIONS.

3) INMARSAT ANTENNA (SIO-38, 1G001CC01, TL2-DW10)
MODIFY TASKING TL2-DW10 OF REFERENCE (B) TO READ: INSTALL A NEW INMARSAT "B" ANTENNA (PURCHASED ON SIOL) ON MAST, MAST YARDARM OR 05 LEVEL. RELOCATION OF INMARSAT "A" IS NOT REQUIRED.

4) SS ELECTRICAL OUTLETS (SIO-40, TL2-DW11)
MODIFY TASKING TL2-DW11 OF REFERENCE (B) TO READ: INSTALL ADDITIONAL SHIP SERVICE ELECTRICAL OUTLETS: THREE (3), 480V/3-PH UTILIZING SPARE CIRCUIT BREAKERS IN SHIP SERVICE POWER PANELS. INITIAL TASKING DESIGNATED FOUR (4) LOCATIONS.

5) COOLING WATER PRESSURE GAUGES AND ALARMS (SIO-43)
INSTALL WATER PRESSURE GAUGES AND LOW RAW WATER PRESSURE ALARMS ON ALL ENGINES TO MONITOR COOLING WATER.

6) FUME HOODS (SIO-49)
INSTALL A PORTABLE/REMOVABLE FUME HOOD IN THE HYDRO LAB PER ATTACHMENT "B", SHEET 4 OF 4 OF RECP 21. INSTALL A PERMANENT FUME HOOD IN THE MAIN LAB PER ATTACHMENT "B", SHEET 2 OF 4 OF RECP 21. FUME HOODS HAVE BEEN PROCURED ON SIOL.

7) CLEATS, STAPLES, AND PADEYES (SIO-51)
INSTALL ADDITIONAL CLEATS, STAPLES, AND PADEYES, LOCATIONS TO BE DETERMINED BY SHIP'S FORCE.

8) BILGE SUMPS (SIO-56)
ENLARGE THREE (3) EXISTING SUMPS IN THE GENERATOR ROOM AND TWO (2) IN THE WINCH ROOM AS DETAILED IN REFERENCE (C).

9) HYDROPHONE/TRANSDUCER HULL OPENINGS (SIO-69)
INSTALL SPARE HYDROPHONE/TRANSDUCER HULL OPENINGS IN TRANSDUCER VOID, PORT AND STBD CENTERLINE AS DETAILED IN REFERENCE (C).

AGOR 25 TASKING LETTER NO. 3 - DEFERRED WORK ITEMS

10) CHILL WATER CIRCULATION PUMP (SIO-86, TL2-DW15)
MODIFY TASKING TL2-DW15 OF REFERENCE (B) TO READ: REPLACE EXISTING TWO CHILL WATER PUMPS WITH LARGER UNITS EACH WITH SUFFICIENT CAPACITY TO MEET SYSTEM REQUIREMENTS . INSTALLATION OF THIRD PUMP IS NOT REQUIRED.

11) SOUND POWERED PHONE (SIO-100)
INSTALL SOUND POWERED PHONE CAPABILITY AS NECESSARY IN THE WORKING DECK AREA. COORDINATE WITH OTHER SYSTEM CHANGES.

AGOR 25 TASKING LETTER NO. 3 - POST DELIVERY (FUNDED) WORK ITEMS

1) MAGNETIC COMPASS (SIO-66)
REPLACE EXISTING MAGNETIC COMPASS IN PILOT HOUSE OVERHEAD WITH EXTERNAL BINNACLE REFLECTOR/PROJECTION COMPASS MOUNTED ON THE 05 LEVEL TO ELIMINATE INTERFERENCE WITH OPERATIONS AS DETAILED IN REFERENCE (C).

2) THERMAL/ACOUSTIC INSULATION (SIO-121)
INSTALL ADDITIONAL INSULATION IN FALSE CEILINGS IN OUTBOARD STATEROOMS EXPOSED TO WEATHER.

3) FLAG HOIST ARRANGEMENT (SIO-124)
REARRANGE FLAG HOIST TO ALLOW OPERATION FROM 04 LEVEL.

4) NAVIGATION/COMMUNICATION UPS (SIO-126)
INSTALL A 6KVA UPS IN THE PILOT HOUSE TO PROVIDE A SOURCE OF UNINTERRUPTED POWER FOR NAVIGATION AND COMMUNICATIONS EQUIPMENT.

5) DECK EDGE SAFETY RAILS (SIO-127)
PROVIDE DECK EDGE SAFETY RAILS TO REDUCE SPACE BETWEEN THE BOTTOM OF THE BULWARK AND THE ROUNDED DECK EDGES. CURRENT CONFIGURATION POSES PERSONNEL SAFETY HAZARD.

6) ANCHOR SEATING AREA (SIO-136)
MODIFY ANCHOR SEATING AREA AS DETAILED IN ENCLOSURE (6).

7) PASSAGEWAY HAND OFF CAPABILITY (SIO-137)
INSTALL MAGNETIC DOOR HOLDERS FOR HANDS OFF CAPABILITY IN MAIN DECK PASSAGE.

8) DRINKING FOUNTAINS (SIO-141)
INSTALL TWO (2) DRINKING FOUNTAINS MAIN DECK (FWD/AFT).

9) RELOCATE MASTER GYROS (WHOI-3)
RELOCATE MASTER GYRO AND GYRO CONTROL UNIT AWAY FROM THE ALVIN CONTROL AREA. POSSIBLE LOCATION IS THE LONGITUDINAL BHD JUST AFT OF THE PILOT HOUSE.

10) MBT FOR ALVIN SUPPORT EQUIPMENT (WHOI-15)
INSTALL MBT TO OPERATE ALVIN SUPPORT EQUIPMENT FROM SHOREPOWER.

11) TERA SCAN SYSTEM (WHOI-16)
INSTALL TERA SCAN METEOROLOGICAL SYSTEM IN ELECTRONICS LABORATORY FOR SCIENCE OPERATIONS.

12) GAS BOTTLE STORAGE (WHOI-18)
PROVIDE GAS BOTTLE STORAGE 01 LEVEL PORT AFT OF THE HEAVY LIFT CRANE.

AGOR 25 TASKING LETTER NO. 3 - POST DELIVERY (FUNDED) WORK ITEMS

13) WATERTIGHT HATCH (WHOI-19)
PROVIDE ACCESS TO THE PROPULSION MOTOR ROOM FROM MAIN DECK ON THE STBD SIDE TO PROVIDE MOORING LINE STOWAGE CAPIBILITIES.

14) WINCH CONTROL STATION WINDOWS (WHOI-20)
REPLACE OR MODIFY WINCH CONTROL STATION WINDOWS TO ALLOW OPERATORS TO OPEN WINDOWS.

15) BULWARK OPENINGS (WHOI-21)
PROVIDE HINGED OPENINGS IN BULWARK, FR80P AND FR100S TO PROVIDE CLEAR ACCESS THROUGH MAIN DECK BULWARKS AT HYDROBOOMS.

16) ENLARGE BOSUN LOCKER (WHOI-22)
RECONFIGURE HEAD AND VENT ROOM TO ENLARGE BOSUN LOCKER.

17) RELOCATE MOORING BITS (WHOI-23)
RECONFIGURE THE AFT STBD MOORING BITS AND CHOCKS AND INSTALL FAIRINGS IN CORNER A-FRAME.

18) TOPSIDE HOSE VALVE CONNECTIONS (WHOI-24)
PROVIDE SEVEN (7) TOPSIDE FRESH WATER HOSE VALVE CONNECTIONS.

AGOR 25 TASKING LETTER NO. 3 - ENGINEERING GRANT (FUNDED) ITEMS

THE FOLLOWING PROPOSED WORK ITEM REQUIRES ADDITIONAL INFORMATION TO SUPPORT DECISION MAKING. FEASIBILITY STUDIES AND CONCEPT ENGINEERING IS APPROVED:

1) TRANSDUCER VOID ACCESS (SIO-59)
PROVIDE AN AIRLOCK AT THE ACCESS TO THE TRANSDUCER VOID SO THAT TRANSDUCERS MAY BE CHANGED WHILE THE SHIP IS AFLOAT. DISCUSS TRADEOFFS OF OTHER OPTIONS SUCH AS AN INFLATABLE SEAL OR SPOOL PIECE/GATE VALVE ARRANGEMENT.

2) CONSOLIDATED HVAC PACKAGE (SIO-98)
REVIEW GLOSTEN PACKAGE AND MODIFY TO ACCOMMODATE ATLANTIS . REQUIREMENTS.

AGOR 25 TASKING LETTER NO. 3 - APPROVED CONFIGURATION ITEM

1) MOBILE COMMUNICATIONS SOFTWARE (WHOI-17)
INSTALL MOBILE COMMUNICATIONS SOFTWARE TO OPTIMIZE EXISTING COMMUNICATION SYSTEM.

AGOR 25 TASKING LETTER NO. 3 - DELETED WORK ITEMS

THE FOLLOWING WORK ITEMS PREVIOUSLY TASKED ARE DELETED:

1) CRANE MAINTENANCE (24-2A012DK01S, TL1-DW-1)
PROVIDE A MEANS (PLATFORM OR SAFETY RAIL) ON THE PORT AND STBD HEAVY LIFT BOOM CRANES TO ENSURE PERSONNEL SAFETY WHILE CONDUCTING MAINTENANCE ON THE HOIST WINCH DRUM.

(NOT REQUIRED BY OPERATOR)

2) DIVING LOCKER TO ELECTRONICS STOWAGE AND T/S (SIO-16,58, TL1-DW-10)
CONVERT DIVING LOCKER (FWD) TO ELECTRONICS REPAIR STOWAGE. CONVERSION FOR AFT DIVING LOCKER TO PUBLIC T/S WILL BE EVALUATED BASED ON RESULTS OF FEASIBILITY STUDY #8.

(FWD DIVING LOCKER WILL NOT BE CONVERTED TO ELECTRONICS REPAIR STOWAGE. CONVERSION OF AFT LOCKER TO PUBLIC T/S COMPLETED BY MWR#52)

3) TELEVISION ANTENNA (SIO-25, TL1-DW-15)
INSTALL A TRAINABLE TV ANTENNA SYSTEM TO ENHANCE RECEPTION.

(EXISTING SYSTEM IS ADEQUATE)

4) SAFETY RAIL FOR UPTAKE VERTICAL LADDER (SIO-81, 1G010MP01, TL2-DW-14)
PROVIDE AND INSTALL A CLIMBER SAFETY RAIL FOR THE VERTICAL LADDER IN THE UPTAKE. MODIFY LADDER TO ELIMINATE NON-CONTINUOUS TRANSITIONS.

(GRATING PLATFORMS INSTALLED)

AGOR 25 TASKING LETTER NO. 4 - HM&E AND ELECTRONICS (FUNDED) WORK ITEMS

HM&E

1) GE SYSTEM UPGRADE (SIO-159)
UPGRADE GE MONITORING SYSTEM TO PROVIDE A MORE CAPABLE, FLEXIBLE AND SUPPORTABLE SYSTEM.

2) "AS BUILT" DRAWINGS (SIO-160)
REVISE DESIGNATED SHIP CONSTRUCTION TO "AS BUILT" CONFIGURATION TO IMPROVE SHIP LIFE CYCLE MANAGEMENT.

3) UPGRADE SHIPS DRAWINGS TO AUTOCAD (SIO-161)
CONVERT SPECIFIED SHIP DRAWINGS TO AUTOCAD FORMAT TO IMPROVE SHIP LIFE CYCLE MANAGEMENT.

ELECTRONICS

4) VERTICAL REFERENCE UPGRADE (SIO-165)
INSTALL NEW VERTICAL REFERENCE UNIT TO IMPROVE SYSTEM RELIABILITY. EXISTING HIPPY WILL BE RETAINED AS A BACKUP SYSTEM (SIO-164).

5) ADCP/SPEED LOG UPGRADE (SIO-170)
INSTALL UPGRADED ADCP/SPEED LOG TO IMPROVE SYSTEM PERFORMANCE AND COMPATIBILITY.

AGOR 25 TASKING LETTER NO. 4 - POST DELIVERY WORK ITEMS

1) RELOCATE RESCUE BOAT LAUNCH DAVIT (SIO-070, 1B058DK01)
RELOCATE RESCUE BOAT AND DAVIT TO THE 01 LEVEL TO FACILITATE BOAT DEPLOYMENT AND PROVIDE FOR IMBARKATION/EMBARKATION AT THE MAIN DECK LEVEL. DETAILS PROVIDED IN REFERENCE (A).

2) ANNOUNCING SYSTEM INDICATOR LIGHTS (SIO-82)
PROVIDE A MEANS TO DIM THE RED AND GREEN INDICATOR LIGHTS ON THE ANNOUNCING SYSTEM PANEL IN THE PILOT HOUSE SO THEY DO NOT INTERFERE WITH NIGHT VISION.

3) BRIDGE WINDOW ARRANGEMENT (SIO-91)
RECONFIGURE BRIDGE WINDOW ARRANGEMENT TO IMPROVE THE ARC OF VISIBILITY FROM THE HELM. REPLACE EXISTING TWELVE (12) WINDOWS WITH SIX (6) NEW LARGER WINDOWS AS DETAILED IN REFERENCE (A).

4) ANTI-ROLL TANK TLI (SIO-95)
PROVIDE A MEANS TO MONITOR THE QUANTITY OF WATER IN THE ANTI-ROLL TANK TO CORRECT PROBLEM OF WATER SPLASHING OUT. INTEGRATE TLI WITH GE MONITORING SYSTEM.

5) SEWAGE TANK TLI (SIO-99)
INSTALL TANK LEVEL INDICATOR IN THE SEWAGE TANK TO IMPROVE SYSTEM RELIABILITY AND DETECT PROBLEMS.

6) FUEL OIL VENT SYSTEM (SIO-117)
CONNECT THE FWD AND AFT VENTS OF #4 STBD FUEL TANK TO ELIMINATE FUMES AS DETAILED IN REFERENCE (A).

7) 01 LEVEL HVAC IMPROVEMENTS (SIO-120)
MODIFY EXISTING A/C SYSTEM AND INSTALL NEW A/C UNIT TO SERVE PUBLIC SPACES AND ACCOMMODATIONS ON THE 01 LEVEL, AND SCIENTIFIC STOREROOM NO. 1 ON THE UPPER MAIN DECK.

8) GENERATOR ROOM VENTILATION EXHAUST MODIFICATIONS (SIO-122)
MODIFY GENERATOR ROOM EXHAUST FANS TO REDIRECT FLOW DIRECTLY OUTBOARD IN A HORIZONTAL DIRECTION AT ABOUT THE 04 LEVEL.

9) GENERATOR ROOM VENTILATION SYSTEM MODIFICATIONS (SIO-123)
INSTALL SPLITTER VANES IN ELBOWS, AND REMOVE/BLANK OFF SUPPLY TERMINAL OUTLETS.

10) FIRE STATION (SIO-128)
ADD ADDITIONAL MAIN DECK FIRE STATION AT BHD 22 STBD TO ALLOW FOR TWO (2) MAIN DECK HOSES TO BE ACCESSIBLE TO STRM #1. IMPROVEMENT TO FIRE FIGHTING CAPABILITY.

AGOR 25 TASKING LETTER NO. 4 - POST DELIVERY WORK ITEMS

11) ESCAPE SCUTTLE (SIO-129)
INSTALL ESCAPE SCUTTLE 1ST PLATFORM FWD TO PROVIDE A MEANS OF EXIT IN CASE OF AN EMERGENCY.

12) EXHAUST TRUNK (SIO-131)
MOVE BIO-CHEM EXHAUST TRUNK FOR BIO-CHEM LAB TO 02 LVL AFT TO ELIMINATE AFFECTS OF GREEN WATER.

13) EXHAUST WASTE HEAT EVAPORATOR (SIO-135)
INSTALL WASTE HEAT EVAPORATOR TO PRODUCE WATER THAT MEETS QUALITY REQUIREMENTS FOR THE ENGINES AND FOR SCIENCE PURPOSES. WATER CURRENTLY SUPPLIED BY REVERSE OSMOSIS UNITS DOES NOT MEET DIESEL WATER JACKETS AND SCIENTIFIC REQUIREMENTS.

14) BRIDGEWING CONTROL STATIONS (SIO-139)
MODIFY JOINER WORK TO RELOCATE BRIDGE WING CONTROL STATIONS FWD.

15) SHOWER GRAB BARS (SIO-142)
INSTALL ADDITIONAL SHOWER GRAB BARS.

16) ADDITIONAL LABORATORY STORAGE (SIO-143)
PROVIDE ADDITIONAL STOWAGE AIDS IN VOID SPACE IN LABS TO MAXIMIZE STORAGE SPACE.

17) ADDITIONAL PILOT HOUSE STORAGE (SIO-145)
INSTALL LOCKERS OR OTHER SUITABLE STOWAGE AIDS IN THE JOINER WORK VOIDS IN THE PILOT HOUSE.

18) SOUND ISOLATE MACERATOR (SIO-147)
PROVIDE SOUND ISOLATION FOR THE MACERATOR AND ASSOCIATED POTABLE WATER PIPE.

19) PROPELLER FAIRING CONES (SIO-148)
INSTALL PROPELLER FAIRING CONES TO REDUCE HUB VORTEX CAVITATION.

20) MAIN SEA CHEST MODIFICATIONS (SIO-158)
MODIFY SEA CHEST INLETS AND SEA WATER SUCTION LINES, AND INSTALL ADDITIONAL VENT LINES TO PREVENT COOLING PUMPS ON MAIN ENGINES FROM LOOSING SUCTION DUE TO AIR IN THE SALT WATER COOLING SYSTEM.

21) DYNA PURE MIST COLLECTOR (SIO-162)
INSTALL DYNA PURE MIST COLLECTOR SYSTEM ON THREE MAIN ENGINES TO REPLACE THE EXISTING FILTERS WHICH REQUIRE FREQUENT REPLACEMENT.

22) ORCACLOR SEWAGE DISINFECTION SYSTEM (SIO-163)
INSTALL ORCACLOR SYSTEM FOR MSD, ELIMINATING THE NEED FOR LIQUID BLEACH AND ITS ATTENDANT PROBLEMS.

23) EMERGENCY GENERATOR REMOTE STOP (SIO-172)
INSTALL A LINE TO REMOTELY SHUTDOWN THE EMERGENCY DIESEL GENERATOR FROM OUTSIDE OF THE SPACE.

24) RAIN STOPPERS ON WEATHER DOORS (SIO-173)
INSTALL RAIN STOPPERS OVER THREE (3) 04 LEVEL DOORS TO DIVERT RAIN FROM ENTERING THE PILOT HOUSE AND CHART ROOM.

25) FORWARD CARGO HATCH (SIO-174)
MODIFY CARGO HATCH TO THE FORWARD SCIENTIFIC STOREROOM TO CORRECT DIFFICULTIES OF OPENING AND CLOSING. ADD LIFTING EYES AND REMOVABLE SUPPORT TO HOLD HATCH IN THE OPEN POSITION.

26) SCIENCE STOREROOM GRATINGS (SIO-175)
REPLACE GRATINGS TO ALLOW EASY MOVEMENT OF EQUIPMENT TO/FROM DOORS AND HATCHES IN THE FORWARD AND AFT SCIENCE STOREROOMS.

27) SCIENTIFIC SEAWATER SENSING SYSTEM (SIO-177)
MODIFY AUXILIARY SEAWATER SYSTEM TO SIMULTANEOUSLY MEASURE CONDUCTIVITY AND TEMPERATURE AND INCLUDE A DEBUBBLER.

28) SALTWATER COOLING SYSTEM (SIO-179)
REPLACE FERROUS MATERIAL IN THE BOW THRUSTER MOTOR SALTWATER COOLING SYSTEM WITH CU-NI.

29) CHILLED WATER PIPING (SIO-180)
REROUTE CHILLED WATER PIPING AT ACCESS POINTS TO REDUCE INTERFERENCE WITH AIR HANDLER #6.

30) AUTOMATIC THERMOSTAT (SIO-182)
INSTALL THERMOSTATICALLY CONTROLLED FLOW VALVES TO AUTOMATICALLY REGULATE THE FLOW OF LUBE OIL TO THE STERN THRUSTER COOLING HEAT EXCHANGERS.

31) RADHAZ CERTIFICATE (SIO-183)
PROVIDE RADIO FREQUENCY RADIATION (RFE) HAZARDS CERTIFICATION DOCUMENTATION.

32) CRES HARDWARE FITTINGS (SIO-184)
REPLACE CORRODING/PITTING HANDLE LATCH/LOCKS ON WEATHER DOORS.

33) BOSUN STRM DECK DRAIN (SIO-186)
INSTALL DECK DRAIN IN BOSUN STOREROOM. SPACE OPENS ONTO THE WEATHER DECK AFT ON THE MAIN DECK AND IS SUBJECT TO FLOODING.

34) SHIP FENDER STOWAGE (SIO-187)
PROVIDE STOWAGE FOR SIX (6) SHIP'S FENDERS AS DESIGNATED BY SHIP'S FORCE.

35) OVERCRANK PROTECTION (SIO-189)
INSTALL OVERCRANK PROTECTION TO PREVENT ENGINE START SYSTEM FROM EMPTYING OUT THE AIR FLASKS IN THE EVENT OF AN ENGINE FAILING TO START.

36) FOOD SERVICE DRESSER (SIO-192)
MODIFY FOOD SERVICE DRESSER TO PROVIDE ADDITIONAL STOWAGE IN THE GALLEY.

37) SUPPLY AIR INTAKE TO BT/MG ROOMS (SIO-194)
MODIFY THE SUPPLY INTAKE TO BT AND MG ROOMS BY BLANKING OFF THE 01 LEVEL INTAKES AND EXTENDING THE PLENUM TO THE 02 LEVEL TO STOP INGESTION OF GREEN WATER INTO VENTS.

38) SUPPLY AIR EXHAUST FROM BT/MG ROOMS (SIO-195)
MODIFY EXHAUST BY BLANKING OFF THE 01 LEVEL OPENINGS AND EXTENDING THE PLENUM TO THE 02 LEVEL TO STOP INGESTION OF GREEN WATER INTO VENTS.

39) FERROUS HEAT EXCHANGERS (SIO-196)
REPLACE FERROUS HEAT EXCHANGERS THAT HAVE CORRODED.

40) FERROUS HOT WATER RECIRCULATING PUMPS (SIO-197)
REPLACE FERROUS HOT WATER RECIRCULATING PUMPS THAT HAVE CORRODED WITH PUMPS MADE OF BRONZE FOR RELIABLE SERVICE.

41) PORT HYDROBOOM TEMPORARY FIX (WHOI-25)
MODIFY THE PORT SIDE HYDROBOOM TO INCREASE THE LOAD CAPACITY TO HANDLE THE 46,000 LB. BREAKING STRENGTH OF 0.680 FIBER OPTIC CABLE LED FOR A PORTABLE DECK MOUNTED WINCH IN ACCORDANCE WITH GEORGE THOMPSON & ASSOCIATES, INC. DWG #J97008.

42) ALVIN WEIGHTS (WHOI-26)
PROVIDE STOWAGE FOR CONTAINING AND HANDLING OF THE ALVIN WEIGHTS.

43) PSA ENGINEERING SUPPORT (WHOI-28)
CONTRACT WITH THE GLOSTEN ASSOCIATES, INC. FOR PREPARATION OF WORK SPECIFICATIONS AND ENGINEERING SUPPORT FOR PSA AS DETAILED IN ENCLOSURE (4).

44) BATTERY HATCH CLEANOUTS (WHOI-29)
INSTALL CLEANOUTS TO EXISTING HATCH AND SCUTTLE DRAINS AND INSTALL DRAIN IN BATTERY HATCH TO ELIMINATE WATER POOLING.

AGOR 25 TASKING LETTER NO. 4 - MODIFIED WORK ITEM

1) HYDROBOOM PLATFORM (SIO-92, 25TL-2 DW-16)
MODIFY TASKING 25TL-2 (DW-16) TO DELETE INSTALLATION OF A REMOVABLE WORK PLATFORM ON THE PORT HYDROBOOM UNTIL RESOLUTION OF PORT HYDROBOOM FIX. INSTALLATION OF PLATFORM ON THE STBD HYDROBOOM IS NOT AFFECTED.

AGOR 25 TASKING LETTER NO. 5 - POST DELIVERY (FUNDED) WORK ITEMS

1) ALVIN SECURING (WHOI-34)
STRENGTHEN ALVIN FOREBODY RESTRAINING JACK FOUNDATIONS AND IMPROVE JACK MOUNTING ARRANGEMENTS.

2) SECURE ALVIN SLED (WHOI-35)
MODIFY THE TRANSPORT SLED TO PREVENT MOTION IN ROUGH SEAS.

3) CORRECT TOW WINCH FAIRLEAD (WHOI-36)
ADD A STAINLESS STEEL ROD FAIRLEAD AT AFT END OF DECK WHERE THE TOW LINE LEAVES THE SHIP.

4) ADDITIONAL STEPS (WHOI-37)
ADD STEPS UP FROM DECK TO MEET EXISTING STEPS ON A-FRAME.

5) ALVIN TRANSPORT RAILS (WHOI-38)
SEAL/WELD STAINLESS STEEL CAPS TO TOPS OF RAILS AND SHIM RAILS TO MAKE JUNCTIONS SMOOTH.

6) A-FRAME HANDRAIL (WHOI-39)
MODIFY A-FRAME HANDRAIL ALONG TOP OF FOUNDATIONS.

7) CCTV SYSTEM (WHOI-40)
MODIFY THE CCTV SYSTEM TO PROVIDE COVERAGE OF THE ALVIN AT THE POINT OF HOOK-UP, THE TOWING WINCH, AND THE HYDRAULIC POWER UNIT IN THE PMR. TWO (2) ADDITIONAL CAMERA AND MOUNTS ARE REQUIRED. SHIPYARD WILL INSTALL MCT CABLE TRANSITS IN THE MAIN DECK AFT AND IN THE WINCH ROOM AFTER BULKHEAD. WHOI WILL CONNECT AND SUPPLY THE CABLES.

8) DRAIN MODS (WHOI-41)
ENLARGE WATER MAIN HANGER DECK DRAINS AND REDIRECT DRAINS OVERBOARD (NOT TIED INTO A HEADER WITH OTHER DRAINS). CURRENT ARRANGEMENT ALLOWS WATER TO COLLECT IN THE HANGER IN MODERATE TO HEAVY WEATHER. INSTALL A ONE WAY SCUPPER TRAP-DOOR ON THE FWD END.

9) HANGER CATWALK (WHOI-42)
MODIFY HANGER CATWALK (01 LEVEL) AT FWD END TO PROVIDE ADDITIONAL WORKING AREA AND CLEAN UP TRIPPING HAZARDS.

10) TRANSPORT HYDRAULIC SYSTEM (WHOI-43)
ADD REMOTE CONTROL FOR STOP/START OF TRANSPORT HYDRAULIC SYSTEM IN HANGER. ADD REMOTE SWITCH TO THE MOTOR CONTROLLER.

11) ALVIN HANGER ELECTRICAL DEVICES (WHOI-44)
CONVERT ELECTRICAL CONTROLLERS, SWITCHES, OUTLETS AND COMMUNICATION EQUIPMENT ETC. IN ALVIN HANGER TO WATERTIGHT TYPE. SPACE IS EXPOSED TO WEATHER AND POSES A THREAT TO THE SAFETY OF PERSONNEL AND RELIABILITY OF EQUIPMENT.

AGOR 25 TASKING LETTER NO. 5 - POST DELIVERY (FUNDED) WORK ITEMS

12) VENT DUCT (WHOI-46)
MODIFY VENT DUCT AT FWD 01 LEVEL OF ALVIN HANGER TO ELIMINATE "HEAD KNOCKER".

13) 120V SERVICE IN ALVIN SHOPS (WHOI-47)
PROVIDE ADDITIONAL 120V 20 AMP SERVICE TO EACH SHOP.

14) ACCESS DOORS TO ALVIN SHOPS (WHOI-49)
INSTALL VIEWING PORTS TO DOORS TO ALVIN SHOPS.

AGOR 25 TASKING LETTER NO. 6 - POST DELIVERY (FUNDED) WORK ITEMS

1) 600V SWBD AUTOSYNC CIRCUITRY (SIO-171)
REPLACE THE ORIGINAL AUTOMATIC SYNCHRONIZER WITH A NEW DIGITAL AUTOMATIC SYNCHRONIZER TO IMPROVE RELIABILITY OF ELECTRICAL SYSTEM. **THIS IS A CONTRACTOR RESPONSIBLE ITEM. TASKED TO WHOI FOR ACCOMPLISHMENT TO SUPPORT SCHEDULE.**

2) BOW THRUSTER SEACHEST ACOUSTIC TREATMENT (WHOI-27A)
INSTALL RUBBER COATING ON THE STRUCTURAL SURFACES OF THE BOW THRUSTER SEACHEST AND INSTALL TWO (2) INDEPENDENT AIR EMISSION SYSTEMS INSIDE THE BOW THRUSTER SEACHEST TO REDUCE NOISE LEVELS.

3) BOW THRUSTER ROOM ACOUSTIC TREATMENT (WHOI-27B)
INSTALL DAMPENING MATERIAL ON THE FOLLOWING SURFACES TO REDUCE NOISE LEVELS: TOP PLATE OF THE BOW THRUSTER SEA CHEST, BHD 22 BETWEEN TANK TOP AND THE UPPER MAIN DECK, AND SHELL PLATING BETWEEN FRAMES 15 AND 22 BETWEEN THE TANK TOP AND THE UPPER MAIN DECK.

4) TRANSDUCER WELL AIR LOCK (WHOI-30)
MODIFY TRANSDUCER WELL TO PROVIDE A PRESSURIZED WATERTIGHT TRUNK BETWEEN THE TANK TOP AND THE 1ST PLATFORM DECK, ALLOWING ACCESS TO THE TRANSDUCER VOID WHILE AFLOAT.

5) CONSOLIDATED HVAC DUCT WORK (WHOI-31)
MODIFY EXISTING VENTILATION SYSTEMS TO CHANGE ENGINEER STORES AND PUMP ROOM FROM FORCED VENTILATION TO AIR CONDITIONING. NEW SUPPLY AND RETURN DUCTS SHALL BE INSTALLED AS REQUIRED. ELIMINATE A VENTILATION AIR INTAKE TERMINAL FROM THE 02 LVL.

6) PERMANENT HYDROBOOM FIX (WHOI-33)
MODIFY THE HYDROBOOM TO PROVIDE A MORE PERMANENT FIX TO SUPPORT MISSION LOAD REQUIREMENTS. **THIS IS A CONTRACTOR RESPONSIBLE ITEM. TASKED TO WHOI FOR ACCOMPLISHMENT TO SUPPORT SCHEDULE.**

7) LAB POWER (WHOI-48)
A FEASIBILITY STUDY IS APPROVED TO INVESTIGATE PROVIDING UPS CAPABILITY IN ALL LABS.

8) LAB DOORS (WHOI-50)
A FEASIBILITY STUDY IS APPROVED TO INVESTIGATE REMOVING MAIN DECK AFTERMOST DOOR AND REARRANGE DOOR SWING DIRECTIONS TO SUPPORT OPERATIONAL REQUIREMENTS.

9) DECK MOD TO ACCOMMODATE VAN (WHOI-51)
EXTEND 01 LEVEL AFT DECK AND MODIFY RAIL TO ACCOMMODATE ISOTOPE VAN.

AGOR 25 TASKING LETTER NO. 6 - POST DELIVERY (FUNDED) WORK ITEMS

10) NON-SKID MAIN DECK AFT (WHOI-52)
INSTALL HIGHER PROFILE NON-SKID IN THE VICINITY OF THE ALVIN HANGER, ALVIN RAIL, AND ROV HANGER.

11) HYDROBOOM CONTROL AT 02 LVL MARKEY CONTROL STATION (WHOI-53)
INSTALL REMOTE CONTROL FOR THE HYDROBOOM AT THE CURRENT LOCAL MARKEY CONTROL STATION.

12) ADDITIONAL 02 LVL DECK DRAINS (WHOI-54)
INSTALL ADDITIONAL DECK DRAINS ON 02 LEVEL AFT TO CORRECT FOR THE ACCUMULATION OF EXCESS WATER.

13) SURFACE CONTROL AREA OVERHEAD LIGHTS (WHOI-55)
INSTALL ADDITIONAL ON/OFF LIGHT SWITCH IN THE SURFACE CONTROLLER'S WORKING AREA.

14) ALVIN DEHUMIDIFIER (WHOI-56)
MODIFY THE ALVIN DEHUMIDIFIER TO RECIRCULATE THE AIR FROM THE SUBMARINE BACK TO THE DEHUMIDIFIER TO IMPROVE EFFICIENCY AND REDUCE NOISE LEVELS.

15) UPGRADE DPS (WHOI-57)
UPGRADE THE EXISTING DPS SYSTEM BY UPGRADING TO A PENTIUM-BASED COMPUTER WITH WINDOWS TYPE SOFTWARE.

16) CHILL AND FREEZE BOX FUMES (WHOI-58, SIO-181)
A FEASIBILITY STUDY IS APPROVED TO INVESTIGATE CAUSE OF BAD TASTE FROM FOODS STORED IN THE CHILL AND FREEZE BOXES

17) SCIENCE STORAGE AIDS (WHOI-59)
PROVIDE ADDITIONAL STOWAGE AIDS IN VOID SPACE IN SCIENCE HOLD TO MAXIMIZE STORAGE SPACE. RELOCATE SPARE FIRE EXTINGUISHERS.

18) ALVIN WEIGHT STORAGE (WHOI-60)
INSTALL PERMANENT STORAGE CAPABILITY ABOVE ALVIN WEIGHT STORAGE AREA.

AGOR 25 TASKING LETTER NO. 7 - POST DELIVERY (FUNDED) WORK ITEMS

1) JACKET WATER COOLER (NEW HEADS) (WHOI-61)
REPAIR CORRODED JACKET WATER OIL COOLER HEADS. COAT WITH CERAMIC COATING AND WELD AS NECESSARY.

2) BOOSTER HEATER OUTLET PIPE (WHOI-62)
INVESTIGATE AND REPAIR LEAKING PIPE IN DISHWASHER BOOSTER HEATER.

3) BULWARK STANCHIONS (WHOI-63)
MODIFY BULWARKS WITH CHOCKS TO PREVENT FURTHER DAMAGE FROM MOORING LINE STRESS.

4) UNCONTAMINATED SEAWATER OVERBOARD (WHOI-64)
EXTEND UNCONTAMINATED SEAWATER SYSTEM TO A PERMANENT OVERBOARD DISCHARGE AT THE VESSEL'S WATERLINE.

5) ENG ROOM SHELVING (WHOI-65)
REPLACE WOOD SHELVING WITH INCOMBUSTIBLE MATERIAL IN LOWER ENGINE ROOM, PORT SIDE.

6) ENG ROOM SHELVING PORT PLATFORM (WHOI-66)
PROVIDE ADDITIONAL STORAGE IN ENGINE ROOM, PORT SIDE PLATFORM DECK.

7) A-FRAME WORK PLATFORM (WHOI-67)
PROVIDE WORK PLATFORM BELOW THE EXISTING PLATFORM ON THE A-FRAME.

8) WET LAB DOOR (WHOI-68)
REPLACE EXISTING REMOVABLE SILL DOUBLE DOOR TO THE WET LAB WITH A SILL-LESS DOOR WITH PERSONNEL ACCESS; SIMILAR TO MAIN LAB DOOR.

9) ANCHOR WINDLASS HAND WHEELS (WHOI-69)
EXTEND THE HAND WHEELS APPROXIMATELY 18 INCHES. CURRENT CONFIGURATION IS TOO CLOSE TO THE CHAIN AS IT GOES THROUGH THE WILDCAT.

Appendix (B)

R/V ATLANTIS - All Work Items

09-Oct-98

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
PROVIDE SPARE DETACHABLE LINKS AND ANCHOR CONNECTING LINKS.	1B087DK01 2G026DK01	25TL-1 (DW-3)	PDA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,000)	O
INSTALL MAINTENANCE PLATFORMS ON PORT AND STBD HEAVY LIFT BOOM CRANES.	2A012DK01 (24)	N/A	N/A			DELETED TASKING 25TL1 (DW-1): NOT REQUIRED BY OPERATOR.	C
PROVIDE TABLE MOUNTED KETTLE W/ STAINLESS STEEL WIRE BASKET AND TILTING TABLE MOUNTED STEAM KETTLE W/ REMOVABLE SINGLE PIECE COVER.	2G026SP01 (24)	N/A	N/A			DELETED TASKING 25TL1(DW-2): COMPLETED BY SHIP'S FORCE	C
INSTALL PORTABLE, REMOVABLE AFT CAPSTAN.	SIO #001	25TL-1 (DW-4)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE (1,000)	O
MODIFY AND COMPLETE UNCONTAMINATED SEAWATER SYSTEM.	SIO #002 ECP 31	N/A	N/A			COMPLETE - ECP 31	C
INSTALL THERMOSALINOGRAPH FOR MULTIBEAM SONAR.	SIO #003	25TL-1 (DW-5)	PDA			MAT ON SIOL - NO COST ASSOCIATED	C
COMPLETE INSTALLATION OF UPGRADED INTEGRATED SIS.	SIO #004 ECP 45	25TL-1 (DW-6)	PDA/FOA			(REISSUED MWR #48 AS ECP 45)	C
INSTALL ADD'L DIAL TELEPHONE & JACKS IN MASTER & CH SCI SR.	SIO #005 MWR #21	N/A	N/A			COMPLETE - MWR #21 - ($7692)	C
INSTALL ADD'L SOUND POWERED PHONES IN MASTER SR.	SIO #006 MWR #21	N/A	N/A			COMPLETE - MWR #21 - ($7692)	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
OUTFIT (2) LAB VANS.	SIO #007	25TL-1 (CA-1)	PDA/FOA			SIOL - (WHOI FUND 92,000)	C
INSTALL F.O. DAY TANK OVERFLOW TO F.O.T. #5 C.	SIO #008 MWR #49	25TL-1 (DW-7)	PDA			COMPLETE - MWR #49 - ($3960)	C
INSTALL ADD'L DIAL TELEPHONE & JACKS (SIS).	SIO #009	25TL-2 (PD-1)	PSA	8,933			C
INSTALL ADD'L SOUND POWERED PHONE JACKS BETWEEN TRANSDUCER VOID AND VOID ACCESS.	SIO #010	N/A	N/A			COMPLETED BY ECP45 AT NO ADDITIONAL COST.	C
ADD "SCIENTIFIC PARTY" GROUP TO PA SYSTEM.	SIO #011	N/A	N/A			NO ACTION REQUIRED	C
INSTALL ADD'L DESKS & COMPUTER WORKSTATIONS IN SRs.	SIO #012	25TL-1 (DW-8)	FOA		1,650	MATERIAL ORDERED ON SIOL	C
INSTALL MISSION ANNOUNCING SYSTEM.	SIO #013	25TL-2 (DW-1)	PSA		89,319	CONTRACT (PO) AWARDED	C
INSTALL MILK/SODA DISPENSER IN MESS ROOM (AGOR 24). INSTALL SINK AND SODA MACHINE IN MESS ROOM (AGOR 25).	SIO #014	25TL-2 (DW-2)	PDA			COMPLETE - MWR #54 - ($9413) MODIFIED TASKING 25TL-1 (DW-9)	C
CONVERT MAIN LAB STRM TO ELECTRONICS WORKSHOP.	SIO #015 ECP 37	N/A	N/A			COMPLETE - ECP 37	C
CONVERT DIVING LKR (FWD) TO ELECTRONICS REPAIR STOWAGE.	SIO #016	N/A	N/A			DELETED TASKING TL2(DW-10): FWD DIVING LKR WILL NOT BE CONVERTED	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
CONVERT HAZ MATERIAL LKR TO RES TECH OFFICE (AGOR 24) CONVERT HAZ MATERIAL LKR TO BOSUN LKR (AGOR 25)	SIO #017	25TL-1 (DW-11)	PDA			COMPLETE MWR #53 - ($30,000)	C
INSTALL Z-DRIVE L.O. TRANSFER SYSTEM.	SIO #018	N/A	N/A			KA ITEM COMPLETED BY HMI	C
SEGREGATE FUME EXHAUSTS IN BIOCHEM/ANALYTICAL AND WET LABS (EACH WITH SEPARATE BLOWERS AND DISCHARGERS). INSTALL Y-DAMPER FOR NORMAL EXHAUST DISCHARGE.	SIO #019 1G026AX01	25TL-1 (DW-12)	N/A			COMBINED WITH SIO-49	C
INSTALL FLAMMABLE LIQUID AND PAINT LKR.	SIO #020	25TL-1 (DW-13)	PDA			COMPLETE MWR #53 - ($30,000)	C
ADD 4" CAPPED PIPE PENETRATIONS FOR SCIENTIFIC WIREWAYS.	SIO #021	N/A	N/A			NO ACTION REQUIRED	C
INSTALL AIR-POWERED EDUCTORS TO BILGE SUCTION PIPING IN GEN RM AND WINCH RM.	SIO #022	25TL-3 (DW-1)	PSA		8,067	PREVIOUSLY TASKED BY 25TL-1 (DW-14)	C
INSTALL SW WASHDOWN STATIONS FR 100 AND FR 120, BOTH FED FROM AUXILIARY SEAWATER SYSTEM.	SIO #023/065 ECP 37	N/A	N/A			COMPLETE - ECP 37	C
INSTALL (1) WASHER & (2) DRYERS IN LAUNDRY.	SIO #024 2G518SP01	25TL-2 (DW-3)	PSA		8,030		C
INSTALL UPGRADED ENTERTAINMENT TV ANTENNA.	SIO #025	N/A	N/A			DELETED TASKING: 25TL1(DW-15) EXISITING SYSTEM IS ADEQUATE.	C
INSTALL L.O. TOTALIZER (OIL VOLUME METER).	SIO #026	25TL-1 (DW-16)	PSA		4,560		C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
REPLACE EXISTING MAIN LAB EXT DOOR WITH WEATHER TIGHT DOUBLE-WIDE DOOR WITH REMOVABLE WT COAMING.	SIO #027 2G518DC01	25TL-2 (DW-4)	PSA		13,591		C
INSTALL DAMAGE CONTROL LOCKERS FORWARD AND AFT.	SIO #028 MWR #18/53	25TL-1 (DW-17)	PDA			COMPLETE MWR #18/53	C
INSTALL POTABLE WATER SYSTEM ISOLATION VALVES. INSTALL HOT WATER HEATER ISOLATION VALVES AND CROSS-CONNECT PIPING @ EACH HOT WATER HEATER.	SIO #029	25TL-2 (DW-5)	PSA		13,497		C
INSTALL SEWAGE TANK OVERFLOW TO GEN ROOM BILGE (WITH CONTAINMENT AND ALARM).	SIO #030	25TL-1 (DW-18)	PSA			INCORPORATED INTO (SIO-163)	C
RELOCATE CTD & HYDRO WINCHES, 02 LVL.	SIO #031 ECP 37	N/A	N/A			COMPLETE ECP 37	C
MODIFY HYDROBOOM HEAD TO SUIT RELOCATED WINCHES.	SIO #032	N/A	N/A			NO ACTION REQUIRED	C
REPLACE PIPING IN SEISMIC SYSTEM TO LESS CORROSIVE MATERIAL. RECONFIGURE SO THE WORKING DK CONNECTIONS ARE AFT. PROVIDE A CUT-OUT VALVE AT THE HIGH PRESSURE SEISMIC AIR CONNECTION OF THE AFT WORKING DECK.	SIO #033 1A002AX01	N/A	N/A			NO ACTION REQUIRED	C
INSTALL (11) SS COMPRESSED AIR OUTLETS.	SIO #034	25TL-3 (DW-2)	PSA		27,353	PREVIOUSLY TASKED BY 25TL-2 (DW-7)	C
ENLARGE INTERIOR ACCESS DOORS AND WIDEN PASSAGEWAY BETWEEN SCI SR#1, MAIN LAB, AND BIOCHEM/ANALYTIC LAB.	SIO #035	25TL-2 (DW-8)	PSA		65,056	CANCEL MWR #42	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
MODIFY/ENLARGE ACCESS BETWEEN MAIN DECK VANS & HYDRO LAB.	SIO #036	N/A	N/A			NO ACTION REQUIRED	C
MODIFY HEAVY LIFT CRANES TO PERMIT SIMULTANEOUS BOOM & WHIP OPERATION.	SIO #037	25TL-2 (DW-9)	PSA		11,500	MATERIAL ON SIOL	C
RELOCATE EXISTING INMARSAT "A" ANTENNA. INSTALL A NEW INMARSAT "B" ANTENNA.	SIO #038 1G500CC02	25TL-3 (DW-3)	FOA		6,839	PREVIOUSLY TASKED BY 25TL-2 (DW-10)	C
PROVIDE MEDICAL EQUIPMENT - REFRIGERATOR, COUNTER, SMALL INSTRUMENT STERILIZER, SURGICAL/EXAM LIGHT AND TABLE, SAFE, I.V. POLE AND SECURING BRACKET, EMERGENCY POTABLE WATER BOTTLES, ADDL PATIENT BERTH, AND EMERG CALL IN T/S.	SIO #039 1G004MD01 1G005MD01 1G006MD01 1G009MD01 1G500MD02-05	25TL-1 (DW-19)	PSA			PARTIALLY COMPLETED - MATERIAL PROVIDED ON SIOL. ESTIMATE TO COMPLETE ($2,500)	O
INSTALL (4) 480V/3-PH ADD'L SS ELECT OUTLETS ON MAIN DECK AFT.	SIO #040	25TL-3 (DW-4)	PSA		3,176	PREVIOUSLY TASKED BY 25TL-2 (DW-11)	C
INSTALL ADD'L UPS IN ELECTRONICS COMPUTER LAB.	SIO #041	25TL-1 (DW-20)	FOA			COST INCLUDED IN SIS	C
INSTALL ALARM MONITOR ON VITAL DC POWER SYSTEM	SIO #042	N/A	N/A			DUPE OF (SIO-075)	C
INSTALL RAW WATER PRESSURE GAUGES & LOW PRESSURE ALARMS ON ALL ENGINES.	SIO #043	25TL-3 (DW-5)	PSA		8,400		C
LOSS OF VACUUM ALARM ON SEWAGE SYSTEM	SIO #044	N/A	N/A			INCLUDED IN (SIO-163)	C
INSTALL HIGH QUALITY DEIONIZATION FILTERS FOR LAB QUALITY WATER.	SIO #045	25TL-1 (DW-21)	FOA		7,442	MATERIAL ON SIOL	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
MODIFY FOREMAST STRUTS TO ELIMINATE LINE-HANDLING INTERFERENCE. INSTALL WOCE IMET METEOROLOGICAL PACKAGE.	SIO #046/052	25TL-2 (PD-2)	PSA	32,744		IMET MAT ON SIOL	C
RELOCATE INCINERATOR TO UNASSIGNED SPACE. REDIRECT GASES FROM RECIRCULATING INTO THE SHIPS SUPPLY VENTILATION SYSTEM. INVESTIGATE INSTALLING WASTE OIL TRANSFER PIPING. CONVERT OLD INCINERATOR ROOM TO TRASH STOREROOM.	SIO #047/055 ECP 37	N/A	N/A			COMPLETE - ECP 37	C
MODIFY BULWARK TEMPORARY FITTINGS (CLEATS, PADEYES, ETC.) TO FIT EXISTING BULWARK CAPRAILS; DRILL CAPRAIL MAKING HOLES TO SUIT.	SIO #048	N/A	N/A			NO ACTION REQUIRED	C
INSTALL ADD'L FUME HOODS IN MAIN LAB & HYDRO LAB.	SIO #049	25TL-3 (DW-6)	PSA		138,548	MATERIAL IS ON SIOL (INCLUDES SIO-19)	C
INSTALL OVERHEAD WEIGHT HANDLING MONORAIL SYSTEM IN THE STAGING BAY.	SIO #050 ECP 37	N/A	N/A			COMPLETE - ECP 37	C
INSTALL ADD'L CLEATS, STAPLES & PADEYES.	SIO #051	25TL-3 (DW-7)	PSA		23,830		C
INSTALL JOINER A/C BOUNDARY DOORS, 1ST PLATFORM AT FRS 64 & 99.	SIO #053 MWR #25	N/A	N/A			COMPLETE - MWR#25 - ($5149)	C
INSTALL BACKUP FO PURIFIER.	SIO #054 1G500MP04	25TL-2 (DW-12)	PSA		29,510	COMPLETE INSTALLATION. ESTIMATE TO COMPLETE ($18,000)	O
REDESIGN & INSTALL LARGER ROSE BOXES.	SIO #056	25TL-3 (DW-8)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($58,000)	O

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
INSTALL UPGRADED CCTV SYSTEM.	SIO #057	25TL-1 (DW-6)	FOA			COST INCLUDED IN SIS	C
CONVERT AFT DIVING LKR TO PUBLIC TOILET AND DELUGE SHOWER	SIO #058	N/A	N/A			(MWR #52 - AFT DIVING LKR TO TOILET -$9371)	C
INSTALL AIR LOCK ON TRANSDUCER VOID ACCESS.	SIO #059	25TL-3 (F-1)	N/A			TASKED AS FEASIBILITY STUDY: 25TL-3 (F-1). COST INCLUDED IN WHOI ITEM #14	C
RELOCATE CTD & HYDRO WINCH TRANSFORMER & SCRs.	SIO #060 ECP 37	N/A	N/A			COMPLETE - ECP 37	C
RELOCATE WT SLIDING DOOR, 1ST PLATFORM FROM BHD 22 TO BHD 40.	SIO #061	N/A	N/A			DELETED WORK ITEM	C
ADD EXT. BOLT SOCKETS, 02 LVL FWD OF FR 85.	SIO #062	N/A	N/A			NO ACTION REQUIRED	C
INSTALL A TRACTION WINCH CONTROL HOUSE (AFT).	SIO #063 ECP 37	N/A	N/A			COMPLETE - ECP 37	C
INSTALL DRAIN TROUGHS UNDER STAGING BAY DOORS.	SIO #064 ECP 37	N/A	N/A			COMPLETE - ECP 37	C
EXTEND AUX SW SYSTEM TO FANTAIL TO PROVIDE SCIENCE WASHDOWN	SIO #065	N/A	N/A			DUPE OF (SIO-023)	C
REMOUNT COMPASS SO MAGNETIC MATERIAL DOES NOT INTERFERE WITH OPERATION.	SIO #066	25TL-3 (PD-1)	PSA	6,441			C
INSTALL (4) QA ALUM WEATHER DOORS WITH STAINLESS STEEL KNIFE EDGES AND TRIM.	SIO #067	N/A	N/A			DELETED WORK ITEM	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
INSTALL ADD'L SS ELECT OUTLETS: 480V, 3-PH AND 120V,1-PH.	SIO #068	N/A	N/A			INCLUDED IN (SIO-040)	C
INSTALL SPARE HYDROPHONE/TRANSDUCER HULL OPENINGS IN TRANSDUCER VOID.	SIO #069	25TL-3 (DW-9)	PSA		29,439		C
REMOVE AND REINSTALL RESCUE BOAT ON 01 LEVEL.	SIO #070 1B058DK01	25TL-4 (PD-1)	PSA	82,343			C
INSTALL HOT WATER OUTLET THERMOMETERS.	SIO #071 MWR #16	N/A	N/A			COMPLETE - MWR #16 - ($6,987)	C
INSTALL CLIMBER SAFETY RAIL AT UPPER MOST MAST SECTION AND PORT AND STBD VHF ANTENNA PEDESTALS.	SIO #072 MWR #17 1B001CC01	N/A	N/A			COMPLETE - MWR #17 - ($4,047)	C
MODIFY INSTALLATION OF JOINER DOOR BETWEEN WORKSHOP AND PASSAGE TO MAKE FUMETIGHT.	SIO #073 MWR #19	N/A	N/A			COMPLETE - MWR #19 - ($519)	C
PROVIDE LIFTING SLINGS FOR SHIP'S BROW.	SIO #074 MWR #20	N/A	N/A			COMPLETE - MWR #20 - ($324)	C
PROVIDE A "UPS IN USE" ALARM/INDICATOR AT THE MCS CONTROL STATION.	SIO #075	25TL-2 (DW-13)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,000)	O
FO TANK #2 SHOULD BE RE-FLUSHED.	SIO #076 ECP 39	N/A	N/A			COMPLETE - ECP 39	C
INSTALL TOTALIZING DISCHARGE FLOWMETERS ON ROs.	SIO #077 1B007AX01	25TL-1 (DW-22)	PSA		3,215		C
MOORING LINE STOWAGE REELS	SIO #078	N/A	N/A			DELETED WORK ITEM	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
SEWAGE SYS: MANHOLE COVERS, REPAIR COAMING, INSTALL OVERFLOW SENSOR, SPRAY SHIELDS, CONNECTION WITH FIREMAIN SYS, COAMING EXHAUST, RELOCATE POTABLE WATER LINE, SOUNDING TUBE, INSTALL SALTWATER WASHDOWN NOZZLES, SINK ETC., PRESSURE GAUGE. COAMING FOR MSD.	SIO #079/084 1B007EP01 1B008EP01 1B017EP01 1A001EP01 1A002EP01 1G006EP01 1G007EP01 1G008EP01 1G010EP01 1G011EP01 1G014EP01	25TL-1 (DW-18)	PSA		7,500	MODIFIED BY 25TL-2 (DW-6) - SEE (SIO-163)	C
ADD DISCHARGE DE-IONIZATION FILTER ON RO UNITS.	SIO #080 1G500MP03	25TL-1 (DW-23)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($6,000)	O
PROVIDE UPTAKE VERTICAL LADDER WITH CLIMBER SAFETY RAIL AND REMOVE 2 NON-CONTINUOUS TRANSITIONS.	SIO #081 1B028MP01	N/A	N/A			INSTALLED GRATING PLATFORMS. DELETED TASKING: 25TL2 (DW-14)	C
REMOUNT OR DIM FOLLOWING LIGHTS: RED AND GREEN LIGHTS ON ANNOUNCING SYSTEM.	SIO #082	25TL-4 (PD-2)	PSA	1,632		NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,632)	O
RELOCATE 10CM RADAR ANTENNA TO REDUCE/ELIMINATE BLIND SPOT.	SIO #083 1B004OP01	N/A	N/A			NO ACTION REQUIRED	C
PROVIDE COLLECTION VESSEL W/ HANDLES WITH AT LEAST 35 PERCENT OF FRYER CAPACITY.	SIO #085 1B023SP01	N/A	N/A			COMPLETED BY SHIP'S FORCE	C
PROVIDE SMOOTH UNHINGED COVER FOR DEEP FAT FRYER WELL.	SIO #085 1B024SP01	N/A	N/A			COMPLETED BY SHIP'S FORCE	C
CHILLED WATER SYSTEM PUMPS.	SIO #086 1G500AX13	25TL-3 (DW-10)	PSA		15,056	PREVIOUSLY TASKED AS 25TL-2 (DW-15) PUMP ON SIOL	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
INSTALL CROSS CONNECT PIPING BETWEEN THE INLET AND DISCHARGE PIPING TO THE COOLING COILS ON ALL REMOTE CHILL WATER PUMPS.	SIO #087 MWR #31	N/A	N/A			COMPLETE - MWR #31 - ($15227)	C
INSTALL EXHAUST VENTILATION ABOVE DISHWASHER.	SIO #088	25TL-1 (DW-24)	PSA		3,885		C
PROVIDE MECHANICAL EXHAUST VENTILATION AND INSTALL HULL INSULATION IN BOSUN STRM.	SIO #089	25TL-2 (PD-3)	PSA	31,337		NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($31,337)	O
CONNECT BOW THRUSTER MOTOR THERMOCOUPLES AND THERMOSTATS TO GE SYSTEM TO PROVIDE A TEMP MONITOR AND OVERHEAT ALARM.	SIO #090 MWR #28	N/A	N/A			COMPLETE - MWR #28 - ($11316)	C
RECONFIGURE BRIDGE WINDOW ARRANGEMENT TO IMPROVE THE ARC OF VISIBILITY FROM THE HELM.	SIO #091 1A501NV01	25TL-4 (PD-3)	PSA	83,894			C
CATWALK FOR HYDROBOOM.	SIO #092	25TL-4 (MOD-1)	PSA		23,834	PREVIOUSLY TASKED BY 25TL-2 (DW-16). STBD SIDE ONLY UNTIL PORT BOOM FIX ESTABLISHED.	C
RELOCATE HYDROBOOM POWER PACK.	SIO #093	N/A	N/A			NO ACTION REQUIRED	C
HYDROBOOM CONTROL MODS.	SIO #094	25TL-1 (DW-25)	FOA		21,165	CANCEL MWR #59	C
ANTI-ROLL TANK TLI.	SIO #095	25TL-4 (PD-4)	PSA	15,572			C
MODIFY A-FRAME CATWALK AND BLOCK ATTACHMENTS.	SIO #096	N/A	N/A			NO ACTION REQUIRED	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
RELOCATE GEN RM CO2 BOTTLES TO WINCH ROOM.	SIO #097 1G029DC01	25TL-1 (DW-26)	PDA			COMPLETE - MWR #51 - ($25008) INSTALL FLOOD SYSTEM SIRENS (TL2-DW-17)	C
CONSOLIDATED HVAC DUCT WORK PACKAGE.	SIO #098	25TL-3 (F-2)	PSA			TASKED AS FEASIBILITY STUDY: 25TL-3 (F-2). COST INCLUDED IN WHOI #14	C
TANK LEVEL INDICATOR FOR SEWAGE TANK.	SIO #099	25TL-4 (PD-5)	PSA	3,582			C
SOUND POWERED PHONE SYSTEM	SIO #100	25TL-3 (DW-11)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($32,500)	O
INSTALL WINCH CONTROL STATION, HYDRO AND CTD	SIO #101	N/A	N/A			NO ACTION REQUIRED	C
DOPPLER SONAR HULL WORK	SIO #102	N/A	N/A			NO ACTION REQUIRED	C
INSTALL STOWAGE AIDS IN ALL SHIP STOREROOMS.	SIO #103 1B025SP01 1G500SP02	25TL-1 (DW-27)	FOA		80,678		C
INSTALL VARIABLE SPEED CONTROLLER FOR AUXILIARY SEAWATER PUMP MOTOR.	SIO #104	N/A	N/A			NO ACTION REQUIRED	C
MODIFY A-FRAME HYDRAULIC RAMS AND STRUCTURE.	SIO #105	N/A	N/A			NO ACTION REQUIRED	C
WORKBOAT IMPROVEMENTS	SIO #106	N/A	N/A			NO ACTION REQUIRED	C
INSTALL ASHTECH ANTENNA MAST.	SIO #107	25TL-2 (CA-1)	PDA			CONFIGURATION APPROVAL	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
MODIFY ANCHOR HANDLING SYSTEM	SIO #108 MWR #60 1G500DK04	25TL-2 (PD-4)	FOA			INCLUDED IS (SIO-136)	C
MODIFY PLUMBING DRAINAGE SYSTEM TO A GRAVITY DRAIN SYSTEM.	SIO #109	25TL-2 (PD-5)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($3,600)	O
MODIFY ANTIROLL TANK VENT PIPING.	SIO #110	25TL-2 (PD-6)	PSA	7,293			C
MODIFY ACCOMMODATION LADDER (GANGWAY) PLATFORM.	SIO #111	25TL-2 (PD-7)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($29,000)	O
MODIFY STBD TRAWL CRANE BOOM & BOOM CRUTCH.	SIO #112	25TL-2 (PD-8)	FOA	12,337			C
MODIFY MCS FOR GRAVIMETER	SIO #113	N/A	N/A			NO ACTION REQUIRED	C
INSTALL UNISTRUT BHD CHANNELS AND COMPLETE OUTFITTING OF CLIMATE CONTROL CHAMBER AND SCIENTIFIC FREEZER.	SIO #114	N/A	PDA			COMPLETED BY HMI AT NO ADDITIONAL COST	C
INSTALL SOUND ISOLATION MOUNTS ON REFRIGERATION PLANT FOR CLIMATE CONTROL CHAMBER AND SCIENTIFIC FREEZER.	SIO #115	N/A	N/A			COMPLETE	C
INCREASE SIZE OF WATERMAKER BRINE OVERBOARD DISCHARGE PIPING AND CHANGE TO NON-FERROUS MATERIAL.	SIO #116	N/A	N/A			COMPLETE - MWR#58	C
MODIFY FO VENT SYSTEM TO ELIMINATE FUMES	SIO #117	25TL-4 (PD-6)	PSA	33,079			C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
CO2 FIXED FLOOD SYSTEM SIRENS	SIO #118 *1G001DC01	25TL-2 (DW-17)	PDA			COMPLETE - MWR #51 - ($25008) MODIFIED BY TL2-DW-17	C
PROVIDE SHOREPOWER TO WINCHES	SIO #119 1A002EL01	N/A	N/A			NO ACTION REQUIRED	C
IMPROVE 01 LEVEL HVAC	SIO #120	25TL-4 (PD-7)	PSA	215,464			C
INSTALL THERMAL/ACOUSTIC INSULATION.	SIO #121	25TL-3 (PD-2)	PSA	25,273		COMBINE WITH SIO#117	C
MODIFY GENERATOR ROOM EXHAUST	SIO #122	25TL-4 (PD-8)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($98,300)	O
PROVIDE GENERATOR ROOM SPOT COOLING.	SIO #123 1G525MP01	25TL-4 (PD-9)	PSA	43,250		OPTION B AND C	C
MODIFY FLAG HOIST ARRANGEMENT.	SIO #124	25TL-3 (PD-3)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($4,500)	O
PROVIDE 1500KW CAPABILITY TO SS BUS.	SIO #125	N/A	N/A			NO ACTION REQUIRED	C
ADD NAV/COMM UPS.	SIO #126	25TL-3 (PD-4)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($5,000)	O
INSTALL DECK EDGE SAFETY RAILS.	SIO #127	25TL-3 (PD-5)	PSA	14,984			C
ADD MAIN DECK FIRE STATION.	SIO #128	25TL-4 (PD-10)	N/A			NO ACTION REQUIRED	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
INSTALL ESCAPE SCUTTLE 1ST PLATFORM FORWARD.	SIO #129	25TL-4 (PD-11)	N/A	. 17,279		NO ACTION REQUIRED	C
MOVE GENERATOR ROOM FOAM HOSES.	SIO #130 WHOI #005	N/A	N/A			REPLACED BY (WHOI-005)	C
MOVE EXHAUST TRUNK 01 LEVEL FORWARD.	SIO #131	25TL-4 (PD-12)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($3,200)	O
INSTALLATION OF SALT WATER COOLED HEAT EXCHANGER FOR MAIN AND SHIP SERVICE GENERATORS.	SIO #132	N/A	N/A			NO ACTION REQUIRED	C
WATERCOOL MAIN GENERATORS.	SIO #133	N/A	N/A			NO ACTION REQUIRED	C
INSTALLATION OF FRESH WATER DISTILLING PLANTS USING JACKET WATER WASTE HEAT EXCHANGERS.	SIO #134	N/A	N/A			NO ACTION REQUIRED	C
ADD WASTE HEAT EVAPARATOR.	SIO #135	25TL-4 (PD-13)	PSA	151,416			C
MODIFY ANCHOR SEATING AREA.	SIO #136 1G500DK21	25TL-3 (PD-6)	PSA	43,772			C
INSTALL HANDS OFF CAPABILITY IN MD PASSAGE.	SIO #137	25TL-3 (PD-7)	PSA	22,637			C
INSTALL 30 INCH DOORS ON MAIN DECK.	SIO #138	N/A	N/A			DELETED WORK ITEM	C
MODIFY BRIDGEWING CONTROL STATIONS.	SIO #139	25TL-4 (PD-14)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($26,800)	O

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
MODIFY WINCH ROOM VENT SYSTEM.	SIO #140	N/A	N/A			NO ACTION REQUIRED	C
INSTALL DRINKING FOUNTAINS MAIN DECK.	SIO #141	25TL-3 (PD-8)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($5,800)	O
INSTALL SHOWER GRAB BARS.	SIO #142	25TL-4 (PD-15)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($17,106)	O
INSTALL STORAGE IN VOID SPACE IN LABS.	SIO #143	25TL-4 (PD-16)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($8,300)	O
MODIFY PH CHART DESK.	SIO #144	N/A	N/A			NO ACTION REQUIRED	C
INSTALL STORAGE CAPABILITY IN PH VOIDS.	SIO #145	25TL-4 (PD-17)	N/A			NO ACTION REQUIRED	C
SMOOTH INSIDE OF TRANSDUCER TUBE.	SIO #146	N/A	N/A			NO ACTION REQUIRED	C
SOUND ISOLATE MASCERATOR.	SIO #147	25TL-4 (PD-18)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($28,500)	O
INSTALL PROPELLER FAIRING CONES.	SIO #148	25TL-4 (PD-19)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($14,000)	O
FEASIBILITY BUBBLE SWEEPDOWN.	SIO #149	N/A	N/A			NO ACTION REQUIRED	C
INSTALL BUBBLE SWEEPDOWN MODS.	SIO #150	N/A	N/A			NO ACTION REQUIRED	C
INSTALL WINCH ROOM EXHAUST FAN.	SIO #151	N/A	N/A			NO ACTION REQUIRED	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
INSTALL EXHAUST FAN FOR BOW THRUSTER ROOM.	SIO #152	N/A	N/A			NO ACTION REQUIRED	C
INSTALL SEANET SYSTEM.	SIO #153	N/A	N/A			NO ACTION REQUIRED	C
RELOCATE ELECTRICAL PANELS MAIN DECK PASSAGE.	SIO #154	N/A	N/A			NO ACTION REQUIRED	C
RELOCATE OR MODIFY SOUNDING TUBES FOR FR 44-49.	SIO #155	N/A	N/A			NO ACTION REQUIRED	C
INSTALL CALL BELL, PILOT HOUSE TO BOW.	SIO #156 WHOI #008	N/A	N/A			REPLACED BY (WHOI-008)	C
FEASIBILITY TO MODIFY SEA CHEST	SIO #157	N/A	N/A			NO ACTION REQUIRED	C
INSTALL MAIN SEACHEST MODS.	SIO #158	25TL-4 (PD-20)	PSA	77,232			C
UPGRADE MACHINERY CONTROL SYSTEM TO THE GE SIMPLICITY I/U SYSTEM.	SIO #159 1G504EL01	25TL-4 (DW-1)	PSA			HM&E FUNDED FROM CARRY-OVER ($190,551)	C
REVISE DESIGNATED SHIP CONSTRUCTION DRAWINGS TO "AS BUILT" CONFIGURATION.	SIO #160	25TL-4 (DW-2)	PSA			HM&E FUNDED FROM CARRY-OVER ($79,682)	C
CONVERT DESIGNATED SHIP CONSTRUCTION DRAWINGS TO AUTOCAD.	SIO #161	25TL-4 (DW-3)	PSA			HM&E FUNDED FROM CARRY-OVER ($50,000)	C
INSTALL DYNAPURE MIST COLLECTOR SYSTEM ON THREE MAIN ENGINES	SIO #162 1A529MP01	25TL-4 (PD-21)	PSA	10,297			C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
INSTALL ORCACLOR SEWAGE DISINFECTION SYSTEM FOR THE INSTALLED MSD.	SIO #163 1G500EP03/04 /07-15 1G520EP01	25TL-4 (PD-22)	PSA	56,191			C
RELOCATE HIPPY	SIO #164	N/A	N/A			NO ACTION REQUIRED	C
UPGRADE VERTICAL REFERENCE UNIT	SIO #165	25TL-4 (DW-4)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($53,000)	O
MODIFY SOFTWARE TO DRIVE EPC GRAPHICS RECORDER TO DISPLAY FR SUN	SIO #166	N/A	N/A			WARRANTY ITEMS ON AGOR 24	C
MOD SEABEAM 2112 SYS SOFTWARE TO PERMIT RESIZING OF DISPLAY WINDOW	SIO #167	N/A	N/A			WARRANTY ITEMS ON AGOR 24	C
UPGRADE ODEC BATHY 2000 SYSTEM	SIO #168	N/A	N/A			WARRANTY ITEMS ON AGOR 24	C
UPGRADE AND MODIFY SEABEAM 2112 SHALLOW WATER PERFORMANCE	SIO #169	N/A	N/A			WARRANTY ITEMS ON AGOR 24	C
UPGRADE DOPPLER SPEEDLOG/ADCP.	SIO #170	25TL-4 (DW-5)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($175,000)	O
RESEARCH AND MODIFY 600V SWBD AUTOSYNC CIRCUITRY.	SIO #171 1G505EL01	25TL-6 (PD-1)	PSA	44,644		ESTIMATE TO COMPLETE ($40,000)	O
INSTALL REMOTE STOP FOR EMERGENCY GENERATOR	SIO #172	25TL-4 (PD-23)	PSA	8,400			C
INSTALL RAIN STOPPER EYEBROWS OVER 3 WEATHER DOORS ON 04 LEVEL.	SIO #173	25TL-4 (PD-24)	PSA			DONE IN TRADE @ NOT COST	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
MODIFY FWD CARGO HATCH COVER TO LIFT-OFF TYPE.	SIO #174	25TL-4 (PD-25)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($2,000)	O
REPLACE SCIENTIFIC STOREROOM DECK GRATING SYSTEM	SIO #175	25TL-4 (PD-26)	PSA	17,400			C
REPLACE INSTALLED PROPULSION MOTOR RPM INDICATORS	SIO #176	N/A	N/A			NO ACTION REQUIRED	C
UPGRADE AUXILIARY SEAWATER SENSING SYSTEM	SIO #177	25TL-4 (PD-27)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($18,000)	O
MODIFY BULWARK SECTION AT STBD SIDE OF WORKING DECK	SIO #178	N/A	N/A			REPLACED BY (WHOI-021)	C
MODIFY SW COOLING SYSTEM PIPING TO BOW THRUSTER MOTOR HEAT EXCHANGER	SIO #179	25TL-4 (PD-28)	FOA			COMPLETED AT NO COST	C
REROUTE CHILLWATER PIPING	SIO #180	25TL-4 (PD-29)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($2,000)	O
INVESTIGATE AND CORRECT CAUSE OF F.O. FUMES IN CHILL AND FREEZE BOXES	SIO #181	N/A	N/A			DUPE OF (WHOI-058)	C
INSTALL AUTOMATIC THERMOSTAT CONTROL OF SW FLOW TO STERN THRUSTER L.O. COOLERS	SIO #182	25TL-4 (PD-30)	PSA	15,207			C
PROVIDE RADHAZ CERT DOCUMENTATION	SIO #183	25TL-4 (PD-31)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,000)	O
REPLACE CORRODING AND PITTING LOW-GRADE CRES HARDWARE AND FITTINGS	SIO #184	25TL-4 (PD-32)	PSA			PARTIALLY COMPLETE ($1,000 WHOI FUNDED). ESTIMATE TO COMPLETE ($7,000)	O

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
INSTALL TAKE DOWN JOINTS ABOVE STRIKER PLATE FOR TANK SOUND TUBES	SIO #185	N/A	N/A			NO ACTION REQUIRED	C
INSTALL DECK DRAIN IN BOS'N STOREROOM	SIO #186	25TL-4 (PD-33)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,300)	O
INSTALL SUITABLE STOWAGE FOR SHIP'S FENDERS	SIO #187	25TL-4 (PD-34)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($3,000)	O
INSTALL PRESSURE SENSORS, ALARMS & GAGES TO MONITOR SW COOLING SYSTEM PRESSURE.	SIO #188	N/A	N/A			NO ACTION REQUIRED	C
INSTALL OVERCRANK PROTECTION ON STARTING AIR SYSTEM TO DIESEL ENGINES	SIO #189	25TL-4 (PD-35)	PSA	1,890			C
INSTALL CATWALKS, WEATHERPROOF GYRO REPEATER ETC.	SIO #190	N/A	N/A			NO ACTION REQUIRED	C
INSTALL GARBAGE DISPOSAL UNIT IN GALLEY VEGGIE PREP AREA DBL. SINK	SIO #191	N/A	N/A			(WHOI-007)	C
MODIFY ENCLOSED PART OF FOOD SERVICE DRESSER TO PROVIDE STORAGE	SIO #192	25TL-4 (PD-36)	N/A			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($12,500)	O
UPGRAGE PRICE SEISMIC AIR COMPRESSORS TO 2000 PSI	SIO #193	N/A	N/A			NO ACTION REQUIRED	C
MODIFY SUPPLY AIR INTAKE TO BOW THRUSTER AND MG RM TO PREVENT GREEN WATER INTAKE	SIO #194	25TL-4 (PD-37)	PSA	95,514		ESTIMATE TO COMPLETE (10,000)	O
MODIFY SCREENED EXHAUST DISCHARGES ON EXHAUST PLENUM AND TRUNK	SIO #195	25TL-4 (PD-38)	N/A				C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
REPLACE FERROUS HEAT EXCHANGERS	SIO #196	25TL-4 (PD-39)	PSA	10,014			C
REPLACE FERROUS HOT WATER RECIRC PUMPS	SIO #197	25TL-4 (PD-40)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($5,800)	O
REPLACE WORKBOAT WITH SMALLER INFLATABLE BOAT TO SUPPORT SUBMERSIBLE OPERATIONS.	WHOI #001	25TL-2 (PD-9)	FOA	19,368			C
INSTALL ONE-MAN OPERATED LAUNCHING SYSTEM FOR WORKBOAT.	WHOI #002 2G023DK01	25TL-2 (F-1)	PSA			TASKED AS FEASIBILITY STUDY: 25TL-2 (F-1). COST INCLUDED IN (WHOI-028)	C
RELOCATE MASTER GYROS AND GYRO CONTROL UNITS.	WHOI #003	25TL-3 (PD-9)	PSA	6,700			C
PROVIDE WINCH READOUTS ON BRIDGE	WHOI #004	25TL-2 (PD-10)	PSA	10,000		MATERIAL ORDERED ON SIOL. HAS NOT ARRIVED. ESTIMATE TO COMPLETE ($1,500)	O
RELOCATE AFFF HOSEREELS IN LOWER LEVEL GEN RM.	WHOI #005 1G500DC02	25TL-2 (PD-11)	PSA			INCLUDED IN (SIO-054)	C
BOW THRUSTER STEERING MOTOR: MODIFY BRIDGE CONSOLE TO INDICATE "STEERING MOTOR RUNNING" AND INSTALL FAILURE ALARM.	WHOI #006 1G500AX12 1G500AX14	25TL-2 (PD-12)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($5,000)	O
ADD DISPOSAL IN GALLEY SERVICE SINK.	WHOI #007 1G500SP03	25TL-2 (PD-13)	N/A			NOT COMPLETED PRIOR TO SCN	O
INSTALL CALL BELL SYSTEM BETWEEN BOW LOOKOUT AND BRIDGE.	WHOI #008 1G500EL03	25TL-2 (PD-14)	PSA	6,061			C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
LIGHT AND DISPLAY DIMMING FEATURE.	WHOI #009 1G500NV02	N/A	N/A			NO ACTION REQUIRED.	C
IMPROVE TLI READING TO INCLUDE OIL/WATER AND OIL/AIR INTERFACES.	WHOI #010 2G026EP01	N/A	N/A			RESCREENED CARD GN - NOT REQUIRED	C
SIMRAD/ROBERTSON TECHNICAL SUPPORT	WHOI #011	25TL-2 (PD-15)	FOA	1,700			C
ELECTRICAL CONTROL ENGINEERING TECHNICAL SUPPORT.	WHOI #012	25TL-2 (PD-16)	PSA	11,002		($11,002 @ FOA) - PSA COSTS IN (SIO-171)	C
REDUCE BOW THRUSTER NOISE IN STATEROOMS. FEASIBILTY/SPECS.	WHOI #013	25TL-2 (F-2)	N/A	22,742		TASKED AS FEASIBILITY STUDY. SEE (WHOI-027)	C
PROVIDE ADDITIONAL BERTHING	WHOI #014	25TL-2 (F-3)	N/A	18,156		TASKED AS FEASIBILITY STUDY 25TL-2 (F-3). WILL NOT BE COMPLETED DUE TO COST.	C
INSTALL MBT TO OPERATE ALVIN SUPPORT EQUIPMENT FROM SHOREPOWER.	WHOI #015	25TL-3 (PD-10)	FOA	10,772			C
INSTALLATION OF TERA SCAN SYSTEM	WHOI #016	25TL-3 (PD-11)	FOA	12,664			C
INSTALL MOBILE COMMUNICATIONS SOFTWARE	WHOI #017	25TL-3 (CA-1)	FOA			CONFIGURATION ITEM	C
PROVIDE GAS BOTTLE STORAGE	WHOI #018	25TL-3 (PD-12)	FOA	9,824			C
PROVIDE WT HATCH, MAIN DECK AFT	WHOI #019	25TL-3 (PD-13)	PSA	8,141			C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
CONVERT (2) WINCH CONTROL STATION WINDOWS TO ALLOW OPERATORS TO OPEN WINDOWS.	WHOI #020	25TL-3 (PD-14)	PSA	5,765			C
PROVIDE HINGED OPENINGS IN BULWARK, FR 80P AND FR 100S.	WHOI #021	25TL-3 (PD-15)	PSA	22,066			C
RECONFIGURE HEAD AND VENT RM TO ENLARGE BOSUN LKR.	WHOI #022	25TL-3 (PD-16)	PSA	7,405			C
RELOCATE AFT STBD MOORING BITS, INSTALL CHOCK, AND INSTALL FAIRING IN CORNER A-FRAME.	WHOI #023	25TL-3 (PD-17)	PSA	22,780			C
PROVIDE (7) TOPSIDE FRESH WATER HOSE VALVE CONNECTIONS.	WHOI #024	25TL-3 (PD-18)	PSA	15,915			C
MODIFY PORT HYDROBOOM (TEMP MOD)	WHOI #025	25TL-4 (PD-41)	FOA	63,761			C
PROVIDE BRACING AND SECURING FOR ALVIN WEIGHTS	WHOI #026	25TL-4 (PD-42)	FOA	2,000			C
REDUCE BOW THRUSTER NOISE	WHOI #027A 1G500OH11	25TL-6 (PD-2)	PSA	117,983		SEE (WHOI-013)	C
REDUCE BOW THRUSTER NOISE	WHOI #027B	25TL-6 (PD-3)	PSA	58,393		SEE (WHOI-013)	C
REDUCE BOW THRUSTER NOISE	WHOI #027C		N/A				C
PSA ENGINEERING SUPPORT	WHOI #028	25TL-4 (PD-43)	PSA	96,187	10,816		C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
BATTERY HATCH CLEANOUTS	WHOI #029	25TL-4 (PD-44)	PSA	8,548			C
INSTALL AIR LOCK ON TRANSDUCER WELL	WHOI #030	25TL-6 (PD-4)	PSA	91,128			C
CONSOLIDATED HVAC DUCT WORK	WHOI #031	25TL-6 (PD-5)	PSA	56,322			C
WORKBOAT LAUNCH SYSTEM	WHOI #032		N/A			FEASIBILITY STUDY COMPLETED. WORK NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($8,500)	O
PERMANENT PORT HYDROBOOM FIX	WHOI #033	25TL-6 (PD-6)	PSA			HMI WARRANTY ISSUE. (WHOI COST $46,593)	C
ALVIN SECURING	WHOI #034	25TL-5 (PD-1)	PSA	24,700		HMI WARRANTY ISSUE	C
SECURE ALVIN SLED	WHOI #035	25TL-5 (PD-2)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($10,000)	O
CORRECT TOW WINCH FAIRLEAD	WHOI #036	25TL-5 (PD-3)	PSA	2,236			C
INSTALL ADD'L STEPS TO MEET A-FRAME STEPS	WHOI #037	25TL-5 (PD-4)	PSA	3,191			C
ALVIN TRANSPORT RAILS	WHOI #038	25TL-5 (PD-5)	PSA	12,408			C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
MODIFY A-FRAME HANDRAIL	WHOI #039	25TL-5 (PD-6)	PSA	3,508			C
MODS TO CCTV SYSTEM.	WHOI #040 1G500EL89	25TL-5 (PD-7)	PSA	7,211			C
HANGER DRAIN MODS	WHOI #041	25TL-5 (PD-8)	PSA	35,270			C
MODIFY 01 LVL HANGER CATWALK	WHOI #042	25TL-5 (PD-9)	PSA	4,800			C
ADD REMOTE CONTROL FOR TRANSPORT HYDRAULIC SYSTEM AND REMOTE SWITCH TO MOTOR CONTROLLER.	WHOI #043	25TL-5 (PD-10)	PSA	1,744			C
CONVERT ALL ELECTRICAL CONTROLLERS, SWITCHES, OUTLETS, ETC IN ALVIN HANGER TO WATERTIGHT TYPE.	WHOI #044	25TL-5 (PD-11)	PSA			PARTIALLY COMPLETED BY HMI. ESTIMATE TO COMPLETE IS ($5,000)	O
BATTERY CHARGER POWER QUALITY	WHOI #045 1K500EL77		PSA			NOT COMPLETED PRIOR TO SCN - ESTIMATE TO COMPLETE ($10,000)	O
MODIFY VENT DUCT AT FWD 01 LVL OF ALVIN HANGER	WHOI #046	25TL-5 (PD-12)	PSA	2,389			C
INSTALL ADD'L 120V SERVICE IN ALVIN SHOPS	WHOI #047	25TL-5 (PD-13)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($3,000)	O
RATIONALIZE LAB POWER (FEASIBILITY STUDY)	WHOI #048	25TL-6 (PD-7)	PSA			COMPLETED DURING PSA ENGINEERING	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
INSTALL DOORS TO ALVIN SHOPS WITH VIEWING PORTS.	WHOI #049	25TL-5 (PD-14)	PSA	2,108			C
PERFORM FEASIBILITY STUDY TO REMOVE MAIN DECK AFTERMOST DOOR AND RE-ARRANGE DOOR SWING DIRECTIONS	WHOI #050	25TL-6 (PD-8)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($2,500)	O
MODS TO 01 DK AFT OF PORT CRANE TO ACCOMODATE VAN.	WHOI #051	25TL-6 (PD-9)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($10,000)	O
NON-SKID MAIN DECK AFT	WHOI #052	25TL-6 (PD-10)	PSA	25,199			C
HYDROBOOM CONTROL TO 02 LVL MARKEY CONTROL STATION	WHOI #053	25TL-6 (PD-11)	PSA	5,474			C
02 LEVEL DECK DRAINS	WHOI #054	25TL-6 (PD-12)	PSA	25,200			C
SURFACE CONTROL AREA OVERHEAD	WHOI #055	25TL-6 (PD-13)	PSA	1,273			C
MODIFY ALVIN DEHUMIDIFIER	WHOI #056	25TL-6 (PD-14)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($1,500)	O
UPGRADE DPS	WHOI #057 1G500OP04	25TL-6 (PD-15)	PSA	76,701			C
INVESTIGATE BAD TASTE IN FOOD BOXES	WHOI #058	25TL-6 (PD-16)	PSA			NOT COMPLETED PRIOR TO SCN. ESTIMATE TO COMPLETE ($2,000)	O
STORAGE AIDS IN SCIENCE HOLDS	WHOI #059	25TL-6 (PD-17)	PSA	32		COMPLETED BY SHIP'S FORCE	C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS
STORAGE ABOVE ALVIN WEIGHT STORAGE	WHOI #060	25TL-6 (PD-18)	PSA	2,100			C
JACKET WATER COOLER (NEW HEADS)	WHOI #061	25TL-7 (PD-1)	PSA	8,330			C
BOOSTER HEATER OUTLET PIPE	WHOI #062 1G501EL01	25TL-7 (PD-2)	PSA	2,693			C
BULWARK STANCHIONS	WHOI #063 1G500DK14	25TL-7 (PD-3)	PSA	8,000			C
UNCONTAMINATED SEAWATER OVERBOARD: CUNI MAIN DECK	WHOI #064	25TL-7 (PD-4)	PSA	4,800			C
ENG ROOM SHELVING (INSURV)	WHOI #065	25TL-7 (PD-5)	PSA	5,000			C
ENG ROOM SHELVING PORT PLATFORM	WHOI #066	25TL-7 (PD-6)	PSA	1,700			C
A-FRAME WORK PLATFORM	WHOI #067	25TL-7 (PD-7)	PSA	5,600			C
WET LAB DOOR (LG DOOR, NO COAMING)	WHOI #068	25TL-7 (PD-8)	PSA	15,450			C
ANCHOR WINDLASS HANDRAIL	WHOI #069	25TL-7 (PD-9)	PSA	1,420			C

DESCRIPTION	25 REF	25 TASK	25 AVAIL	25 PD$	25 DW$	25 COMMENTS	STATUS

POST DELIVERY: **$2,183,971**

DEFERRED WORK: **$655,956**

R/V ATLANTIS
TURNOVER BOOK

Table of Contents

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	August, 1999	Final 1/25/94 - 5/31/98

4. TITLE AND SUBTITLE
Assignment and Operation of the Deep Ocean Research Ship AGOR 25

5. FUNDING NUMBERS
N00014-94-C-0079

6. AUTHOR(S)
Compiled by Barbara J. Martineau

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

8. PERFORMING ORGANIZATION REPORT NUMBER
10947900-01

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Office of Naval Research
Code 321 RF
800 North Quincy Street
Arlington, VA 02117

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for Public Release. Siatribution Unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

The report summarizes outstanding technical issues, trial cards, warranty items and post delivery work items accomplished by the owner's representative during the construction of AGOR 25, Research Vessel Atlantis.

14. SUBJECT TERMS
AGOR 25
Atlantis

15. NUMBER OF PAGES
134

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL

Distribution List

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